

**IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

Vecinos para el Bienestar de la Comunidad Costera)	
)	
)	
Petitioner,)	
)	No. 23-1222
v.)	
)	
Federal Energy Regulatory Commission,)	
)	
Respondent.)	
)	
)	

PETITION FOR REVIEW

Pursuant to Section 19(b) of the Natural Gas Act, 15 U.S.C. § 717r(b), Federal Rule of Appellate Procedure 15, and Circuit Rule 15, Vecinos para el Bienestar de la Comunidad Costera hereby petitions the United States Court of Appeals for the District of Columbia Circuit for review of the following order of the Federal Energy Regulatory Commission (“Commission”):

1. Order on Remand, *Texas LNG Brownsville LLC*, 183 FERC ¶ 61,047 (Apr. 21, 2023).

A copy of the order is attached. This is the same order challenged in *City of Port Isabel v. FERC*, Case No. 23-1175 (D.C. Cir.).

Petitioner was an intervenor in the Commission proceedings

below. Petitioner timely filed a request for rehearing of the Order on Remand, which was denied by operation of law on June 22, 2023. Thus, this Court has jurisdiction to review the Order on Remand pursuant to 15 U.S.C. § 717r(b).

This petition for review is timely filed within 60 days of the Commission's denial of rehearing in accordance with 15 U.S.C. § 717r(b).

Dated: August 17, 2023

Respectfully submitted,

/s/ Thomas Gosselin

Thomas Gosselin
Sierra Club
P.O. Box 4998
Austin, TX 78765
(424) 346-3276
tom.gosselin@sierraclub.org

Nathan Matthews
Sierra Club
2101 Webster St., Suite 1300
Oakland, CA 94612
415-977-5695
nathan.matthews@sierraclub.org

Lisa Diaz
Sierra Club
910 Julia St.
New Orleans, LA 70113
305-336-2258
lisa.diaz@sierraclub.org

*Attorneys for Vecinos para el
Bienestar de la Comunidad Costera*

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Respondent.)

No. _____

PETITIONER’S RULE 26.1 STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and Circuit Rule 26.1,
Petitioner makes the following disclosures:

Vecinos para el Bienestar de la Comunidad Costera: Vecinos para el
Bienestar de la Comunidad Costera (“Vecinos”) has no parent companies and there
are no publicly held companies that have a 10 percent or greater ownership interest
in Vecinos.

Vecinos, an association organized and existing under the laws of the State of Texas, is an unincorporated nonprofit association dedicated to protecting and improving the health, standard of living, and economic development of the coastal community in the Rio Grande Valley of South Texas.

Dated: August 17, 2023

Respectfully submitted,

/s/ Thomas Gosselin

Thomas Gosselin

Sierra Club

P.O. Box 4998

Austin, TX 78765

(424) 346-3276

tom.gosselin@sierraclub.org

*Attorney for Vecinos para el
Bienestar de la Comunidad Costera*

CERTIFICATE OF SERVICE

I hereby certify under penalty of perjury that on August 17, 2023, I served a copy of the foregoing Petition for Review and Corporate Disclosure Statement by email on the following parties, including all members of the service list in FERC Docket Nos. CP16-116.

Matthew Christiansen
General Counsel
Federal Energy Regulatory Commission
888 First St. NE
Washington, DC 20426
matthew.christiansen@ferc.gov

Robert H. Solomon
Solicitor
Federal Energy Regulatory Commission
888 First St. NE
Washington, DC 20426
robert.solomon@ferc.gov

Robert Michael Kennedy, Jr.
Senior Attorney
Federal Energy Regulatory Commission
888 First St. NE
Washington, DC 20426
robert.kennedy@ferc.gov

Gilberto Hinojosa
City Attorney
City of Port Isabel
531 E. St. Francis St.
Brownsville, TX 78520
ghinojosa@ghinojosalaw.net

Michael L O'Neill
Attorney for Texas LNG Brownsville LLC
K&L Gates LLP
1601 K Street NW
Washington, District of Columbia 20006
mike.oneill@klgates.com

Adam Prestidge
Glenfarne Energy Transition, LLC
9950 Woodloch Forest, Suite 1500
The Woodlands, Texas 77380
adam.prestidge@glenfarnecompanies.com

Paul Korman
Attorney for Texas LNG Brownsville LLC
Van Ness Feldman, LLP
1050 Thomas Jefferson Street, 7th Floor
Washington, D.C. 20007
pik@vnf.com

Michael R. Pincus
Attorney for Texas LNG Brownsville LLC
Van Ness Feldman, LLP
1050 Thomas Jefferson Street, 7th Floor
Washington, D.C. 20007
mrp@vnf.com

Mosby Perrow
Attorney for Texas LNG Brownsville LLC
Van Ness Feldman, LLP
1050 Thomas Jefferson Street, 7th Floor
Washington, D.C. 20007
mperrow@vnf.com

Diane Teter
519 S. 4th Ave., Unit D4
Edinburg, Texas 78539
dteterus@yahoo.com

Jim Chapman
200 East 11th St.
Weslaco, Texas 78596
jchapmanrgv@gmail.com

Terence Garrett
81 Torrey Pines Dr.
Laguna Vista, Texas 78578
terrygarrett50@gmail.com

Victoria Scharen
729 North Shore Dr.
Port Isabel, Texas 78578
scharenva@gmail.com

Madeline Sandefur
48 Golf House Rd.
Laguna Vista, Texas 78578
madi.s44@att.net

Joyce Hamilton
1617 Sunnyside Drive
Harlingen, Texas 78552
jhamgo64@gmail.com

Patrick Anderson
107 E Resaca Drive
Los Fresnos, Texas 78566
patricktanderson@yahoo.com

Theresa Rudolph
220 A West Hibiscus
South Padre Island, Texas 78597
islandtheresa@hotmail.com

Eileen Conway
823 West Oyster Drive
Port Isabel, Texas 78578
eileen@rconway.net

Paul Durr
33840 S. Garcia, 354
Port Isabel, Texas 78578
durrpaul@msn.com

Charlotte Barker-Stanton
416 Saunders Street
Laguna Vista, Texas 78578
cbarker@rgv.rr.com

Nicole Ekstrom
222 Palm Blvd
Laguna Vista, Texas 78578
nicoleekstrom@gmail.com

Judith Boris
1844 Oklahoma Avenue
Port Isabel, Texas 78578
tx78578@gmail.com

Flora Gunderson
33580 So.Garcia
#385
Port Isabel, Texas 78578
gunderga@gmail.com

Edna Goette
622 1st Street
Port Isabel, Texas 78578
egoette@sbcglobal.net

William Berg
613 W Saint Charles St
Brownsville, Texas 78520
billberg@outlook.com

Bradley Willis
224 West Oleander
South Padre Island, Texas 78597
yeldarb2k@aol.com

Sara Stephens
224A West Oleander
PO Box 40170
South Padre Island, Texas 78597
snmis@aol.com

John Laferty
701 Orange Lane
Laguna Vista, Texas 78578
michael@jmlaferty.com

Bebe Jowell
23402 S Reynolds
Rio Hondo, Texas 78583
bebejowell@gmail.com

Cathy Laferty
702 Orange Lane
Laguna Vista, Texas 78578
jmlaferty@aol.com

Jodi Burch
2216 Gulf Blvd
South Padre Island, Texas 78957
ferc@jodiburch.com

Patricia Celaya
112 E. Coronado, #104
South Padre Island, Texas 78597
patricia.celaya@retiree.utrgv.edu

Jennifer Mendoza
1221 Upas Avenue
Apt 5
McAllen, Texas 78501
jenmenmarie@gmail.com

Grace Soderberg
Senior Counsel
American Petroleum Institute
200 Massachusetts Ave NW
Washington, District of Columbia 20001
soderbergg@api.org

Jason Rylander
Senior Attorney
Center for Biological Diversity
1411 K St. NW Ste 1300
Washington, District of Columbia 20005
jrylander@biologicaldiversity.org

Natural Gas Supply Association
900 17th Street NW
Suite 500
Washington, District of Columbia 20002
intervenor@ngsa.org

Susan Hill
City Secretary
City of South Padre Island, Texas
4601 Padre Boulevard
South Padre Island, Texas 78597
shill@myspi.org

Timothy Estep
Staff Attorney
Defenders of Wildlife
600 17th Street
Suite 450N
Denver, Colorado 80202
testep@defenders.org

Moneen Nasmith
Earthjustice
48 Wall St. FL 15
New York, New York 10005
mnasmith@earthjustice.org

Ann Jaworski
Counsel
Earthjustice
311 S. Wacker Drive
Suite 1400
Chicago, Illinois 60606
ajaworski@earthjustice.org

Debralee Rodriguez
President, Friends of the Wildlife Corridor
3325 Green Jay Rd.
Alamo, Texas 78516
info@friendsofthewildlifecorridor.org

Kevin Downey
Hogan Lovells US LLP
555 Thirteenth Street, N.W.
Washington, District of Columbia 20004
kevin.downey@hoganlovells.com

Alexander Gregory Junge
Hogan Lovells US LLP
555 Thirteen Street, N.W.
Washington, District of Columbia 20004
greg.junge@hoganlovells.com

Joan Dreskin
General Counsel
Interstate Natural Gas Assn. of America
20 F Street, NW
Suite 450
Washington, District of Columbia 20001
jdreskin@ingaa.org

Christopher Smith
Interstate Natural Gas Association of America
20 F Street, NW
Suite 450
Washington, District of Columbia 20001
csmith@ingaa.org

Rolando Vela
City Manager
Town of Laguna Vista
Laguna Vista, Texas 78578
cm@lvtexas.us

Morgan Johnson
Staff Attorney
Natural Resources Defense Council
1152 15th Street NW
Suite 300
Washington, District of Columbia 20005
majohnson@nrdc.org

Martin Olivarez
Pfizer, Inc.
4500 State Highway 107
McAllen, Texas 78504
mgilberto.olivarez@pfizer.com

/s/ Thomas Gosselin
Thomas Gosselin
Sierra Club
P.O. Box 4998
Austin, Texas 78765
(424) 346-3276
tom.gosselin@sierraclub.org

183 FERC ¶ 61,047
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;
James P. Danly, Allison Clements,
and Mark C. Christie.

Texas LNG Brownsville LLC

Docket No. CP16-116-002

ORDER ON REMAND

(Issued April 21, 2023)

1. The United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit)¹ remanded the Commission's orders authorizing Texas LNG Brownsville LLC's (Texas LNG) construction and operation of the Texas LNG Project,² directing the Commission to (1) explain whether 40 C.F.R. § 1502.21(c) calls for [the Commission] to apply the social cost of carbon protocol or some other analytical framework, as 'generally accepted in the scientific community' within the meaning of the regulation, and if not, why not;³ and (2) "explain why it chose to analyze the projects' impacts only on [environmental justice] communities in census blocks within two miles of the project sites, or else analyze the projects' impacts on [environmental justice] communities within a different radius of each project site."⁴ Further, the court directed the Commission to revisit its public interest determination under section 3 of the Natural Gas Act (NGA).⁵

¹ *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321 (D.C. Cir. 2021) (*Vecinos*).

² *Texas LNG Brownsville LLC*, 169 FERC ¶ 61,130 (2019) (Authorization Order), *order on reh'g*, *Texas LNG Brownsville LLC*, 170 FERC ¶ 61,139 (2020) (Rehearing Order). The D.C. Circuit also remanded, in the same opinion, the Commission's authorization for Rio Grande LNG, LLC to construct and operate an LNG terminal and pipeline, which the Commission addressed in a separate order issued concurrently. *Rio Grande LNG, LLC*, 183 FERC ¶ 61,046 (2023).

³ *Vecinos*, 6 F.4th at 1330.

⁴ *Id.* at 1331.

⁵ *Vecinos*, 6 F.4th at 1331-32.

2. We supplement our environmental analysis of the Texas LNG Project by (1) addressing the argument regarding the social cost of carbon and 40 C.F.R. § 1502.21(c); and (2) updating our analysis of the project's environmental justice impacts consistent with the Commission's current practice. We reaffirm that the Texas LNG Project, as conditioned in the Order Granting Authorization Under Section 3 of the NGA (Authorization Order)⁶ and as modified herein, is not inconsistent with the public interest.⁷

I. Background

3. Texas LNG, a limited liability company organized under the laws of Delaware with its headquarters in Houston, Texas, is a single purpose subsidiary of Texas LNG LLC. As its operations will not be in interstate commerce, Texas LNG will not be a natural gas company as defined in the NGA,⁸ although it will be subject to the Commission's jurisdiction under NGA section 3.

A. Authorization Order

4. On November 22, 2019, the Commission authorized Texas LNG to construct and operate a liquefied natural gas (LNG) export terminal and associated facilities in order to export approximately 4 million metric tonnes per annum (MTPA) of natural gas as LNG.⁹ The project will be sited on 625 acres of land¹⁰ and include two full-containment LNG

⁶ Authorization Order, 169 FERC ¶ 61,130.

⁷ See *id.* PP 21, 86.

⁸ Section 2(6) of the NGA defines a natural gas company to be a person engaged in the transportation of natural gas in interstate commerce. 15 U.S.C. § 717a(6).

⁹ On September 24, 2015, Texas LNG received authorization from the Department of Energy, Office of Fossil Energy (DOE) to export the project's full capacity, which is equivalent to 204.4 billion cubic feet (Bcf) annually (approximately 0.56 Bcf per day (Bcf/d)) equivalent of natural gas, in the form of LNG to countries with which the United States has a Free Trade Agreement (FTA). *Texas LNG Brownsville LNG*, DOE/FE Docket No. 15-62-LNG, Order No. 3716 (Sept. 24, 2015), <https://www.energy.gov/sites/prod/files/2015/09/f26/ord3716.pdf>. On February 10, 2020, DOE issued an order authorizing Texas LNG to export LNG to non-FTA nations, but with which the U.S. still permits such trade. *Texas LNG Brownsville LNG*, DOE/FE Docket No. 15-62-LNG; Order No. 4489 (Feb. 10, 2020) <https://www.energy.gov/sites/prod/files/2020/02/f71/ord4489.pdf>.

¹⁰ Of the 625 acres, about 312 acres would be disturbed for construction of the

storage tanks with a capacity of approximately 210,000 cubic meters of LNG each; two liquefaction trains, each with a capacity of 2.0 MTPA of LNG;¹¹ a single LNG carrier berth; mooring and loading facilities; and other appurtenant facilities.¹² The terminal will receive natural gas via an approximately 10.2-mile-long non-jurisdictional intrastate natural gas pipeline that would interconnect with the Valley Crossing Pipeline.¹³ To date, Texas LNG has not begun construction of any facilities.

5. The Commission determined, based on the findings in the final Environmental Impact Statement (EIS) for the project,¹⁴ that the project's direct and indirect impacts on environmental resources would be temporary or reduced to less-than-significant levels by the implementation of appropriate mitigation measures, with the exception of impacts on visual resources where the project would result in significant impacts when viewed from the Laguna Atascosa National Wildlife Refuge.¹⁵ In addition, the final EIS concluded that the Texas LNG Project, combined with other projects in the relevant geographic scope, would result in significant cumulative impacts: from sediment/turbidity and shoreline erosion within the Brownsville Ship Channel during operations from vessel transits;¹⁶ on the federally listed ocelot and jaguarundi, from habitat loss and potential for increased vehicular strikes during construction;¹⁷ on the federally listed aplomado falcon, from habitat loss;¹⁸ and on visual resources from the presence of aboveground

project facilities. Authorization Order, 169 FERC ¶ 61,130 at P 54.

¹¹ While each liquefaction train will have a nameplate capacity of 2.25 MTPA, Texas LNG anticipates that as operated, each train will produce approximately 2.0 MTPA of LNG for export. *Id.* at n.5 (citing Application at 4, n.8).

¹² *Id.* P 5.

¹³ The Valley Crossing Pipeline is a non-jurisdictional natural gas pipeline that extends southwest from a header system near the Agua Dulce natural gas hub in Nueces County, Texas, to a jurisdictional border-crossing facility east of Cameron County, Texas. *See Valley Crossing Pipeline, LLC*, 161 FERC ¶ 61,084, at P 4 (2017).

¹⁴ The Texas LNG final EIS was issued on March 15, 2019.

¹⁵ Final EIS at 4-115.

¹⁶ *Id.* at 4-303.

¹⁷ *Id.* at 4-317.

¹⁸ *Id.* at 4-318.

structures.¹⁹ The final EIS noted that the Commission could not determine the project's impacts on the environment caused by GHG emissions nor could it determine the significance of the project's contribution to climate change.²⁰ The final EIS found that neither the construction nor operation of the project would result in disproportionately high or adverse environmental and human health impacts on environmental justice communities.²¹ The Commission agreed with the conclusions presented in the final EIS and found that the project, if constructed and operated as described in the final EIS, is an environmentally acceptable action.²²

B. Rehearing Order

6. On December 23, 2019, Sierra Club and seven other petitioners jointly²³ sought rehearing of the Authorization Order. Sierra Club raised numerous concerns, including, air quality impacts, environmental justice impacts, mitigation measures, greenhouse gas emissions, and the Commission's public interest determination. Specifically, Sierra Club stated that the Commission violated NEPA by failing to take a hard look at whether environmental justice communities will bear a disproportionate share of the negative environmental consequences from the project.²⁴ Sierra Club also asserted that the Commission's conclusions regarding its inability to determine whether the project's GHG emissions and contribution to climate change were significant and its reasoning as to why it would not use the social cost of carbon protocol to assess the impacts from the project's GHG emissions were arbitrary.²⁵

7. On February 21, 2020, the Commission denied rehearing. The Commission affirmed the Authorization Order's decision to not calculate or apply the social cost of

¹⁹ *Id.* at 4-327.

²⁰ *Id.* at 4-344.

²¹ *Id.* at 4-156 to 4-157.

²² Authorization Order, 169 FERC ¶ 61,130 at P 86

²³ Specifically, Sierra Club, Texas Rio Grande Legal Aid, Save RGV from LGV, Defenders of Wildlife, the City of South Padre Island, the City of Port Isabel, and the Town of Laguna Vista (collectively, Sierra Club) filed a request for rehearing.

²⁴ Sierra Club Request for Rehearing and Stay at 14-22.

²⁵ *Id.* at 27.

carbon protocol.²⁶ The Commission concluded that the final EIS adequately identified and addressed impacts on environmental justice communities,²⁷ and reaffirmed the conclusion from the final EIS and Authorization Order that there would not be any disproportionately high or adverse environmental and human health impacts on those communities.²⁸ Subsequently, Sierra Club petitioned for review of the Authorization and Rehearing Orders in the D.C. Circuit.

C. The Court's Remand Order

8. On August 3, 2021, the D.C. Circuit remanded the Authorization and Rehearing Orders, holding that the Commission's NEPA analyses of the project's impacts on climate change and environmental justice communities were deficient under the Administrative Procedures Act (APA), and thus, the Commission "must also revisit its determinations of public interest and convenience under Sections 3 and 7 of the NGA."²⁹ Specifically, the court held that the Commission failed to address the petitioners' argument concerning the applicability of the Council on Environmental Quality's (CEQ) regulations with respect to whether the social cost of carbon protocol is "generally accepted" analytical tool for assessing the significance of GHG impacts, thereby rendering the analysis of the project's GHG emissions deficient.³⁰ The court directed the Commission on remand to: "explain whether 40 C.F.R. § 1502.21(c) calls for [the Commission] to apply the social cost of carbon protocol or some other analytical framework, as 'generally accepted in the scientific community' within the meaning of the regulation, and if not, why not."³¹

²⁶ Rehearing Order, 170 FERC ¶ 61,139 at PP 72-74.

²⁷ *Id.* P 40.

²⁸ *Id.* PP 45, 47.

²⁹ *Vecinos*, 6 F.4th at 1331.

³⁰ *Id.* at 1329.

³¹ *Id.* at 1329-30. Section 1502.21(c) provides that "[i]f . . . information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because . . . the means to obtain it are not known, the agency shall include within the environmental impact statement . . . [t]he agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R § 1502.21(c) (2022). In its 2020 rulemaking, CEQ redesignated § 1502.22, "Incomplete or unavailable information" as § 1502.21 in the final rule.

9. The court also held that the Commission's decision to limit its environmental justice analysis of the project's impacts to those affecting communities in census blocks within two miles of the project sites was arbitrary,³² given that the EIS had determined that certain environmental effects of the project would extend beyond that radius (e.g., the court noted that air quality impacts could occur within a radius of 31 miles).³³ The court directed the Commission on remand to explain why it chose to analyze the project's impacts only on communities within a two-mile radius, or, in the alternative, to analyze the project's impacts on communities within a different radius from the project site, and determine whether the Commission's environmental justice conclusion still holds.³⁴ Additionally, because the Commission's analyses of the project's impacts on climate change and environmental justice communities were deficient, the court directed the Commission to revisit its NGA public interest and public convenience and necessity determinations.³⁵

II. Procedural Issues

10. On February 3, August 16, August 31, and October 28, 2022, and on January 6, 2023, Commission staff issued environmental information requests to Texas LNG regarding environmental justice communities, visual impacts, air quality modeling, and emergency planning, in order to address deficiencies noted in the D.C. Circuit's decision. Texas LNG responded to Commission staff's information requests on March 4, May 2, September 15, September 21, October 3, and November 7, 2022, and on January 30, and February 23, 2023.

11. On September 30, 2022, the Commission issued a notice seeking public comments on Texas LNG's responses. The notice stipulated that initial comments were due no later than October 21, 2022, and reply comments no later than November 4, 2022.

12. Numerous comments were filed during the initial comment period, including: (1) statements in general opposition to or support for the project; (2) assertions of deficiencies in Texas LNG's responses, including the revised air modeling; (3) concerns with project impacts on environmental justice communities, including the air quality impacts of volatile organic compounds (VOC) and particulate matter on those communities, inadequate outreach to environmental justice communities, and insufficient information provided on the impacts of offsite parking locations and Texas LNG's

³² *Vecinos*, 6 F.4th at 1331.

³³ *Id.* at 1330.

³⁴ *Id.* at 1331.

³⁵ *Id.*

Emergency Response Plan; (4) concerns regarding climate change and GHGs; and (5) requests for public meetings in a town hall format with Spanish language translation and for all permit documents to be translated into the Spanish language. These comments are addressed below.

13. On November 4, 2022, Texas LNG and American Petroleum Institute submitted reply comments requesting a prompt ruling on the remanded issues. As we are issuing this order, the requests are moot.

14. As noted, commenters requested that the Commission hold public meetings in a town hall format.³⁶ Commenters also requested that the Commission provide greater access to Spanish-speaking communities by providing Spanish language translation at any public meetings and provide a translated version of the Commission's requests for information and the comments and responses to the information requests from Texas LNG.³⁷

15. In this proceeding, and consistent with how the Commission has processed other remand orders,³⁸ we reviewed the record to determine whether the deficiencies identified by the court could be redressed and what, if any, additional information would be helpful. This order addresses the particular issues identified by the court on remand.³⁹ Although the public had opportunities for involvement during the prefiling and environmental review processes associated with the Commission's original consideration of the project,⁴⁰ during this remand proceeding the Commission provided additional

³⁶ See Sierra Club Oct. 19, 2022 Comments at 3-4; Nancy McNab Oct. 21, 2022 Comments at 1.

³⁷ See Sierra Club Oct. 19, 2022 Comments at 3-4.

³⁸ See *Spire STL Pipeline LLC*, 181 FERC ¶ 61,232, at PP 18-20 (2022) (determining the record was sufficient to allow the Commission to address the issues on remand without additional requested briefing); *on reh'g*, *Spire STL Pipeline LLC*, 183 FERC ¶ 31,048 (2023); *NEXUS Gas Transmission, LLC*, 172 FERC ¶ 61,199 (2020) (reviewing the record and the court's instructions on remand to issue a certificate of convenience and public necessity without soliciting additional comments).

³⁹ See, e.g., *SFPP, L.P. v. FERC*, 967 F.3d 788, 797 (D.C. Cir. 2020), *cert. dismissed*, 141 S. Ct. 2170 (2021) (finding that on remand it is up to the Commission to determine if the record should be reopened).

⁴⁰ See Final EIS at 4-468. As the final EIS notes, the applicant provided materials regarding the project in both English and Spanish and Spanish-speaking representatives were present at both the public scoping and comment meetings held in Port Isabel.

opportunities for the public to comment and respond to information filed by Texas LNG related to the issues before us on remand. As stated above, on September 30, 2022, we explicitly solicited comments on the responses provided by Texas LNG to Commission staff's information requests and received over 100 comments. We have considered and responded to all comments within the scope of this remand proceeding and, therefore, because the record is sufficient for us to address the issues identified by the court, we decline to hold additional public meetings on the remanded issues. As for requests related to Spanish translation of documents, while we are not providing such translations in this proceeding, the Commission continues to consider how we can provide greater accessibility to our processes for non-English speaking populations.

16. Commenters also raised issues that are outside the scope of the court's mandate, generally falling within the following categories: (1) opposition to the Texas LNG Project; (2) general comments in support of the projects and requests for regulatory clarity; (3) cultural resource concerns, including concerns relating to consultation with Tribes; (4) biological resource concerns, including impacts on endangered species, wildlife and wildlife habitat, migratory birds, and coastal resources; and (5) general statements about the Commission, LNG, and energy infrastructure. Mr. John Young also questions whether Texas LNG has obtained feedgas from the Valley Crossing Pipeline and whether the Valley Crossing Pipeline operates as an intrastate natural gas pipeline.⁴¹ The Commission will not address these arguments because the Commission considered them in the Authorization and Rehearing Orders⁴² and the court's remand was limited to two issues—whether the social cost of GHG or similar protocol should be used and the scope of the Commission's environmental justice analysis—and they thus are collateral attacks on those orders and need not be considered further.⁴³

⁴¹ Mr. John Young November 12, 2021 Comments at 5, 6.

⁴² See Authorization Order, 169 FERC ¶ 61,130 at PP 18-21 (making a finding that the project is in the public interest); Final EIS at 4-160 (addressing concerns raised by the Carrizo Comecrudo Tribe of Texas); Authorization Order, 169 FERC ¶ 61,130 at PP 42-48 (discussing the impacts on wildlife, migratory birds, and aquatic resources); Authorization Order, 169 FERC ¶ 61,130 at P 4 (noting that Valley Crossing is not a jurisdictional pipeline).

⁴³ See, e.g., *Fla. Se. Connection*, 162 FERC ¶ 61,233, at P 16 (2018) (declining to consider issues that fell outside the scope of the court's mandate); *Arlington Storage Co., LLC*, 149 FERC ¶ 61,158 (2015) (rejecting a request for rehearing of a notice to proceed with construction as a collateral attack on the underlying orders).

III. Discussion

17. As discussed above, the D.C. Circuit remanded the Commission's orders authorizing the Texas LNG Project and directed the Commission to (1) address the argument of whether it must, under CEQ's regulations, apply the social cost of GHG to analyze the project's impacts on climate change, and (2) explain the decision to limit the scope of its environmental justice analysis of the project's impacts to those communities within two miles of the project or else analyze the project's impacts within a different radius. In response to the court's directive, we address the argument regarding the social cost of carbon and 40 C.F.R. § 1502.21(c), as well as update our analysis of the project's environmental justice impacts consistent with the Commission's current practice and with CEQ⁴⁴ and the U.S. Environmental Protection Agency (EPA) guidance.⁴⁵

A. Greenhouse Gas Emissions and Climate Change

18. The court directed the Commission, on remand, to explain whether section 1502.21(c) of CEQ's NEPA-implementing regulations requires the Commission to "apply the social cost of carbon protocol or some other analytical framework, as 'generally accepted in the scientific community' within the meaning of the regulation, and if not, why not."⁴⁶

19. Section 1502.21(c) of CEQ's regulations requires that,

[i]f the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are unreasonable or the means to obtain it are not known, the agency shall include within the environmental impact statement:

⁴⁴ CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf.

⁴⁵ See generally EPA, *Promising Practices for EJ Methodologies in NEPA Reviews* (Mar. 2016) (*Promising Practices*), https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

⁴⁶ *Vecinos*, 6 F.4th at 1330 (quoting 40 C.F.R. § 1502.21(c)).

- (1) A statement that such information is incomplete or unavailable;
- (2) A statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
- (3) A summary of existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment; and
- (4) The agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.⁴⁷

20. The social cost of carbon protocol, now updated to calculate the social cost of specific GHGs,⁴⁸ is an administrative tool intended to quantify, in dollars, estimates of long-term damage that may result from future emissions of carbon dioxide, nitrous oxide, and methane. Accordingly, although we are including the social cost of GHG figures for informational purposes, we find that because the social cost of GHGs tool was not developed for project level review and, as discussed below, does not enable the Commission to credibly determine whether the GHG emissions are significant, section 1502.21 of the CEQ regulations does not require its use in this proceeding.

While we have recognized in some past orders that social cost of GHGs may have utility in certain contexts such as rulemakings,⁴⁹ we have also found that calculating the social cost of GHGs does not enable the Commission to determine credibly whether the reasonably foreseeable GHG emissions associated with a project are significant or not significant in terms of their impact on global climate change.⁵⁰ Currently, however,

⁴⁷ 40 C.F.R. § 1502.21(c). We pause to note that at the time the final EIS was prepared, this regulation was codified at 40 C.F.R. § 1502.22(b).

⁴⁸ The Interagency Working Group on the Social Cost of Greenhouse Gases (IWG) published its first estimates of the social cost of carbon in 2010, which calculated the cost of the damages created by one extra ton of carbon dioxide emissions. In 2016, the IWG published a technical update that included the social costs of methane (social cost of CH₄) and nitrous oxide (social cost of N₂O) thus creating the social cost of GHG nomenclature.

⁴⁹ *Fla. Se. Connection, LLC*, 164 FERC ¶ 61,099, at PP 35-37 (2018).

⁵⁰ See *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, (2017), *aff'd sub nom., Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019); *Del.*

there are no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.⁵¹ Nor are we aware of any other currently scientifically accepted method that would enable the Commission to determine the significance of reasonably foreseeable GHG emissions.⁵² The D.C. Circuit has repeatedly upheld the Commission's decisions not to use the social cost of GHGs, including to assess significance.⁵³

21. For informational purposes, we are disclosing Commission staff's estimate of the social cost of GHGs associated with the reasonably foreseeable emissions from the project, i.e., the emissions from the construction and operation of the project.⁵⁴

Riverkeeper v. FERC, 45 F.3d 104, 111 (D.C. Cir. 2022). The social cost of GHGs tool merely converts GHG emissions estimates into a range of dollar-denominated figures; it does not, in itself, provide a mechanism or standard for judging "significance."

⁵¹ *Tenn. Gas Pipeline Co., L.L.C.*, 181 FERC ¶ 61,051 at P 37; *see also Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 296, *order on reh'g*, 163 FERC ¶ 61,197, at PP 275-297 (2018), *aff'd*, *Appalachian Voices v. FERC*, No. 17-1271, 2019 WL 847199, at 2 (D.C. Cir. Feb. 19, 2019) (unpublished) ("[The Commission] gave several reasons why it believed petitioners' preferred metric, the Social Cost of Carbon tool, is not an appropriate measure of project-level climate change impacts and their significance under NEPA or the Natural Gas Act. That is all that is required for NEPA purposes."); *EarthReports v. FERC*, 828 F.3d 949, 956 (D.C. Cir. 2016) (accepting the Commission's explanation why the social cost of carbon tool would not be appropriate or informative for project-specific review, including because "there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes"); *Tenn. Gas Pipeline Co., L.L.C.*, 180 FERC ¶ 61,205, at P 75 (2022); *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026 at P 14; *Columbia Gulf Transmission, LLC*, 180 FERC ¶ 61,206, at P 91 (2022).

⁵² *See, e.g., LA Storage, LLC*, 182 FERC ¶ 61,026 at P 14 ("there are currently no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.")

⁵³ *See, e.g., EarthReports*, 828 F.3d at 956 (upholding the Commission's decision not to use the social cost of carbon tool due to a lack of standardized criteria or methodologies, among other things); *Del. Riverkeeper v. FERC*, 45 F.4th 104 (also upholding the Commission's decision not to use the social cost of carbon); *Appalachian Voices v. FERC*, 2019 WL 847199 (D.C. Cir. 2019) (same).

⁵⁴ *See Vecinos*, 6 F.4th at 1329-30.

22. Commission staff calculated the social cost of GHGs based on methods and values contained in the Interagency Working Group on the Social Cost of Greenhouse Gases (IWG)'s current draft guidance but note that different values will result from the use of other methods.⁵⁵

23. For this proposed action, the reasonably foreseeable and causally connected GHG emissions are those associated with the project's construction and operation. Based on its filed emissions data, Texas LNG estimated that construction of the Texas LNG Project would result in 122,048 tons of carbon dioxide equivalent (CO₂e) emissions (equivalent to 110,720 metric tons of CO₂e) over the six years of construction, inclusive of terminal, barge, and commissioning emissions.⁵⁶ GHG emissions from the operation of the Texas LNG Project would result in annual CO₂e emissions of about 701,709 tons per year (tpy) (equivalent to 636,580 metric tpy),⁵⁷ which calculation assumes 100% utilization; i.e., it is assumed that the facilities are operated at maximum capacity for 365 days/year, 24 hours/day.⁵⁸

24. Commission staff calculated the social cost of carbon dioxide, nitrous oxide, and methane for the construction and operation of the Texas LNG Project. For the calculations, staff assumed discount rates of 5%, 3%, and 2.5%,⁵⁹ the project would begin

⁵⁵ Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990, Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, (Feb. 2021), https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf (accessed Dec. 14, 2022) (IWG Interim Estimates Technical Support Document).

⁵⁶ Texas LNG Mar. 4, 2022 Response to Commission staff Feb. 3, 2022 Data Request at attach. 9-1.

⁵⁷ Texas LNG May 2, 2022 Response to Commission staff Feb. 3, 2022 Data Request at attach. 9-1. The Texas LNG Project will be constructed and begin operation in two phases, the first phase operational emissions would be 433,227 tons of CO₂e emissions (equivalent to 393,017 metric tons of CO₂e) in 2026 and 2027. *Id.*

⁵⁸ *Id.* The estimate also includes fugitive emissions. We note that this calculation is an overestimate because facilities likely operate at full capacity during, what are typically, limited periods of full demand.

⁵⁹ IWG Interim Estimates Technical Support Document at 24. To quantify the potential damages associated with estimated emissions, the IWG methodology applies consumption discount rates to estimated emissions costs. The IWG's discount rates are a function of the rate of economic growth where higher growth scenarios lead to higher discount rates. For example, IWG's method includes the 2.5% discount rate to address

construction activities in 2023, and that once construction activities are complete, emissions would transition to operational emissions. Noting these assumptions, the emissions from construction and operation of the Texas LNG Project are calculated to result in a total social cost of GHGs equal to \$215,011,202, \$697,367,480, and \$1,013,421,544, respectively (all in 2020 dollars).⁶⁰ Based on the 95th percentile of the social cost of GHGs and the three percent discount rate,⁶¹ the total social cost of GHGs from the project is calculated to be \$2,022,865,531 (in 2020 dollars).

25. The Commission has disclosed the project's reasonably foreseeable GHG emissions. By adopting the analysis in the final EIS, we recognize that the project's contributions to GHG emissions globally contributes incrementally to future climate change impacts,⁶² including impacts in the region.⁶³ We note that there currently are no accepted tools or methods for the Commission to use to determine significance, therefore Commission is not herein characterizing these emissions as significant or insignificant.⁶⁴ Accordingly, we have taken the required "hard look" and have satisfied our obligations under NEPA.

the concern that interest rates are highly uncertain over time; the 3% value to be consistent with Office of Management and Budget Circular A-4 (2003) and the real rate of return on 10-year Treasury Securities from the prior 30 years (1973 through 2002); and the 5% discount rate to represent the possibility that climate-related damages may be positively correlated with market returns. Thus, higher discount rates further discount future impacts based on estimated economic growth. Values based on lower discount rates are consistent with studies of discounting approaches relevant for intergenerational analysis. *Id.* at 18-19, 23-24.

⁶⁰ The IWG draft guidance identifies costs in 2020 dollars. *Id.* at 5 (Table ES-I).

⁶¹ This value represents "higher-than-expected economic impacts from climate change further out in the tails of the [social cost of CO₂] distribution." *Id.* at 11. In other words, it represents a higher impact scenario with a lower probability of occurring.

⁶² Final EIS at 4-342 to 4-344.

⁶³ *Id.* (discussing observations from the Fourth Assessment Report).

⁶⁴ The February 18, 2022 Interim GHG Policy Statement, *Consideration of Greenhouse Gas Emissions in Nat. Gas Infrastructure Project Revs.*, 178 FERC ¶ 61,108 (2022) which proposed to establish a NEPA significance threshold of 100,000 tons per year of CO₂e as a matter of policy, has been suspended, and opened to further public comment. *Certification of New Interstate Nat. Gas Facilities*, 178 FERC ¶ 61,197, at P 2 (2022).

B. Environmental Justice

26. The court found the Commission's analysis of environmental justice impacts to be deficient, directing the Commission on remand to either explain why it chose to analyze the projects' impacts only on communities within a two-mile-radius area of review, or, in the alternative, to analyze the projects' impacts on communities in an area of review with a different radius from each project site and determine whether the Commission's environmental justice conclusion still holds.⁶⁵ Accordingly, on remand, Commission staff conducted a new environmental justice analysis using our current methods for determining an area of review, consistent with CEQ⁶⁶ and EPA⁶⁷ guidance and recommendations, and analyzed the project's impacts on environmental justice communities within those areas. Below, Commission staff has identified the presence of impacted environmental justice communities and has analyzed associated impacts from the Texas LNG Project.

27. In conducting NEPA reviews of proposed natural gas projects, the Commission follows Executive Order 12898, which directs federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their actions on minority and low-income populations (i.e., environmental justice communities).⁶⁸ Executive Order 14008 also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged

⁶⁵ *Vecinos*, 6 F.4th at 1331.

⁶⁶ CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 4 (Dec. 1997) (CEQ's *Environmental Justice Guidance*), https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf.

⁶⁷ *See generally Promising Practices* https://www.epa.gov/sites/default/files/2016-08/documents/nepa_promising_practices_document_2016.pdf.

⁶⁸ Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). While the Commission is not one of the specified agencies in Executive Order 12898, the Commission nonetheless addresses environmental justice in its analysis, in accordance with our governing regulations and guidance, and statutory duties. *See* 15 U.S.C. § 717b; *see also* 18 C.F.R. § 380.12(g) (2022) (requiring applicants for projects involving significant aboveground facilities to submit information about the socioeconomic impact area of a project for the Commission's consideration during NEPA review); FERC *Guidance Manual for Environmental Report Preparation* at 4-76 to 4-80 (Feb. 2017), <https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf>.

communities, as well as the accompanying economic challenges of such impacts.”⁶⁹ Environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”⁷⁰

28. Consistent with CEQ and EPA guidance and recommendations, the Commission’s methodology for assessing environmental justice impacts considers: (1) whether environmental justice communities (e.g., minority or low-income populations)⁷¹ exist in the project area; (2) whether impacts on environmental justice communities are disproportionately high and adverse; and (3) possible mitigation measures.⁷² Consistent with the Commission’s current methodology for identification of environmental justice

⁶⁹ Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Feb. 1, 2021). The term “environmental justice community” includes disadvantaged communities that have been historically marginalized and overburdened by pollution. *Id.* at 7629. The term also includes, but may not be limited to minority populations, low-income populations, or indigenous peoples. *See* EPA, *EJ 2020 Glossary* (Aug. 18, 2022), <https://www.epa.gov/environmentaljustice/ej-2020-glossary>.

⁷⁰ EPA, *Learn About Environmental Justice*, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice> (Sep. 6, 2022). Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies. *Id.* Meaningful involvement of potentially affected environmental justice community residents means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health; (2) the public’s contributions can influence the regulatory agency’s decision; (3) community concerns will be considered in the decision-making process; and (4) decision-makers will seek out and facilitate the involvement of those potentially affected. *Id.*

⁷¹ *See generally* Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). Minority populations are those groups that include: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

⁷² CEQ offers recommendations on how federal agencies can provide opportunities for effective community participation in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of public meetings, crucial documents, and notices. There were opportunities for public involvement during the Commission’s pre-filing and environmental review processes. Final EIS at 1-10 to 1-13, and 4-333. In addition, the Commission requested public comment on responses to recent information requests related to the remand.

communities, staff reviewed the 2020 U.S. Census Bureau American Community survey data for the impact area surrounding the Texas LNG terminal project. As recommended in *Promising Practices*, the Commission uses the 50% and the meaningfully greater analysis methods to identify minority populations.⁷³ Specifically, a minority population is present where either: (1) the aggregate minority population of the block groups in the affected area exceeds 50%; or (2) the aggregate minority population in the block group affected is 10% higher than the aggregate minority population percentage in the county.⁷⁴

29. CEQ's *Environmental Justice Guidance* also directs low-income populations to be identified based on the annual statistical poverty thresholds from the U.S. Census Bureau. Using *Promising Practices*' low-income threshold criteria method, low-income populations are identified as block groups where the percent of a low-income population in the identified block group is equal to or greater than that of the county.

30. To identify potential environmental justice communities, Commission staff used 2020 U.S. Census American Community Survey data⁷⁵ for the race, ethnicity, and poverty data at the state, county, and block group level.⁷⁶ Additionally, in accordance with *Promising Practices*, Commission staff used EJScreen, EPA's environmental justice mapping and screening tool, as an initial step to gather information regarding minority and low-income populations; potential environmental quality issues; environmental and demographic indicators; and other important factors. Appendix B provides current environmental justice community data for the areas affected by the project, including data for the affected block groups, state, and county and maps detailing the affected block groups in relation to the Texas LNG Project.

31. Commission staff collected the block group level data, as discussed in further detail below, and conducted an impacts analysis for the identified environmental justice communities and evaluated health and environmental hazards; the natural physical

⁷³ See *Promising Practices* at 21-25.

⁷⁴ Here, we selected Cameron and Willacy Counties, Texas as the comparable reference communities to ensure that affected environmental justice communities are properly identified.

⁷⁵ U.S. Census Bureau, American Community Survey 2020 ACS 5-Year Estimates Detailed Tables, File# B17017, *Poverty Status in the Past 12 Months by Household Type by Age of Householder*, <https://data.census.gov/cedsci/table?q=B17017>; File #B03002 *Hispanic or Latino Origin By Race*, <https://data.census.gov/cedsci/table?q=b03002>.

⁷⁶ Appendix B includes the data used to inform this environmental justice analysis. Table 1 of Appendix B includes block groups within the 50-kilometer radius of the project.

environment; and associated social, economic, and cultural factors to determine whether impacts would be disproportionately high and adverse on environmental justice communities and also whether those impacts would be significant.⁷⁷ Commission staff assessed whether those impacts on an environmental justice community are disproportionately high and adverse, consistent with EPA's recommendations in *Promising Practices*.⁷⁸

32. As discussed above, the court's opinion explained that an agency's environmental justice analysis must have an area of review for impacts on environmental justice communities that is reasonable and adequately explained, with a rational connection between the facts and the decision made.⁷⁹ In response, Commission staff has reanalyzed the project's impacts on environmental justice communities within an area of review based on the measured distance of the furthest estimated direct impact.

33. Commission staff determined that the furthest potential direct impact for this project is air quality impacts. A 50-kilometer radius around the project represents a conservative estimate of the furthest possible extent of potential impacts associated with air quality.⁸⁰ Accordingly, staff determined that a 50-kilometer radius (approximately 31-mile radius) around the approved Texas LNG site is the appropriate geographic area of analysis for identification of project impacts on environmental justice communities. Further, air modeling for the project indicates that the radius of impact, or the distance at which the concentration of a criteria pollutant goes from above to below the significant impact level⁸¹ is approximately 24 kilometers (approximately 15 miles), which is within

⁷⁷ See *Promising Practices* at 33 (stating that "an agency may determine that impacts are disproportionately high and adverse, but not significant within the meaning of NEPA" and in other circumstances "an agency may determine that an impact is both disproportionately high and adverse and significant within the meaning of NEPA").

⁷⁸ *Id.* at 44-46 (explaining that there are various approaches to determining whether an action will cause a disproportionately high and adverse impact, and that one recommended approach is to consider whether an impact would be "predominantly borne by minority populations or low-income populations"). We recognize that EPA and CEQ are in the process of updating their guidance regarding environmental justice and we will review and incorporate that anticipated guidance in our future analysis, as appropriate.

⁷⁹ *Vecinos*, 6 F.4th at 1330.

⁸⁰ Fifty kilometers is the distance used by the EPA for cumulative air modeling for major stationary sources under its Prevention of Significant Deterioration (PSD) air permitting requirements. 40 C.F.R. pt. 51, app. W.

⁸¹ A modeled result predicting that a proposed source's maximum impact will be below the corresponding significant impact level value may generally be considered to be

the 50-kilometer radius of analysis for impacts on environmental justice communities.⁸²

34. Within a 50-kilometer radius of the Texas LNG Project, there are 284 total census block groups and, out of this total, Commission staff identified 279 environmental justice community block groups. Of those 279 environmental justice block groups, 124 have a minority population that exceeds 50% or is meaningfully greater than their respective counties, one has a low-income population that is equal to or greater than their respective counties, and 154 have both a minority population and a low-income population that exceed the respective thresholds.⁸³ The Texas LNG Project itself is located within an environmental justice community.

35. This order includes an updated analysis of impacts on environmental justice communities using an expanded radius. In reviewing the data, Commission staff determined that potential impacts on the identified environmental justice communities may relate to wetlands, recreational fishing, tourism, socioeconomics, traffic, noise, safety, air quality, greenhouse gases, and visual resources. Environmental justice concerns are not present for other resource areas such as geology, groundwater, surface water,⁸⁴ wildlife, land use, or cultural resources, because the project would have a minimal impact on these resources. The applicable topics, and related mitigation measures, are covered below.

1. Wetlands

36. The final EIS documents that the total impacted wetland area for the Texas LNG Project (42.9 acres) represents about 0.07% of the approximately 65,495 acres of wetlands contained within the hydrologic unit code (HUC) 12 where the project is located.⁸⁵ The loss of wetland habitat, and the subsequent decrease in wetland benefits

a sufficient demonstration that the proposed source will not cause or contribute to a violation of the applicable National Ambient Air Quality Standard or Prevention of Significant Deterioration increment.

⁸² See *infra* PP 67-78.

⁸³ App. B tbl. 1.

⁸⁴ The final EIS determined that increased vessel traffic along the Brownsville Ship Channel would result in a significant cumulative impact on surface water resources during operations from increases in turbidity and shoreline erosion. Final EIS at 4-304. Impacts on environmental justice communities associated with turbidity are discussed below in Section III.B.4, Tourism. Impacts on environmental justice communities associated with shoreline erosion are discussed below in Section III.B.7, Marine Traffic.

⁸⁵ Bahia Grande-BSC Hydrological Unit Code (HUC) 12 Watershed.

(i.e., shoreline and habitat protection for a variety of plant and animal species that can be used for recreation and/or sustenance, and education opportunities), could affect environmental justice communities near the watershed, in which the project is located,⁸⁶ particularly the communities in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1, because these communities are closest to the impacts and as the distance from the project increases, the impacts on wetlands decreases.⁸⁷ We note that Texas LNG is required to obtain applicable U.S. Army Corps of Engineers (Army Corps) Clean Water Act permits for permanent loss of wetland habitat and implement any mitigation measures required by the Army Corps for that loss.⁸⁸

37. All wetlands mitigation for the project would take place at the Loma Ecological Preserve, a preserve located one mile south of the project and within the same watershed as the project.⁸⁹ Based on the foregoing analysis, we conclude that, with implementation of these mitigation measures, impacts on wetlands would be minimized and would not have a significant impact on environmental justice communities.

38. Environmental justice communities in the study area would experience cumulative impacts on wetlands due to impacts previously discussed along with additional impacts from the additional projects within the cumulative geographic scope for wetlands.⁹⁰ Wetland impacts, even with the addition of the Texas LNG Project, would be less than significant⁹¹ and all impacts from the various projects with the geographic scope for wetlands would be appropriately mitigated through implementation of the Clean Water Act permits (state and federal). Thus, overall cumulative wetland impacts on environmental justice communities would be less than significant.

⁸⁶ Final EIS at 4-31.

⁸⁷ App. B Fig. 5-1-1 to 5-2-15.

⁸⁸ Final EIS at 4-35 to 4-36.

⁸⁹ *Id.*

⁹⁰ *Id.* at 4-274.

⁹¹ *Id.* at 4-37.

2. Recreational and Subsistence Fishing

39. As stated in the final EIS, construction and operation of the project could cause some local anglers to use undesignated areas further from the project site.⁹² Texas LNG's proposed pile driving could cause fish to temporarily leave the area, altering behavior patterns of fish near the project, potentially affecting recreational fishing success.⁹³ Given that a majority of the communities within the study area are environmental justice communities, recreational and subsistence fishing users of the area waterbodies likely include individuals from environmental justice communities, particularly the communities located in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1.⁹⁴ Anglers using unknown and undesignated fishing areas near the project site would likely seek other fishing opportunities in the region.⁹⁵ Construction activities at the Texas LNG Project site would not restrict fishing access to bays in the project area or the Gulf of Mexico. In addition, fishing opportunities exist along the remainder of the undeveloped channel shoreline. Permanent impacts on recreational and subsistence fishing by individuals from environmental justice communities may occur due to the loss of available fishing areas from the loss of approximately 1 mile of shoreline due to operation of the LNG marine facilities and loss of in-water fishing areas at certain times due to LNG carrier traffic. Overall, the final EIS concludes that impacts on recreational fishing as a result of the project are not anticipated to be significant.⁹⁶ Based on the foregoing analysis, we conclude that recreational and subsistence fishing impacts on environmental justice communities associated with construction and operation of the Texas LNG Project would occur, but due to the overall size of the waterway and existing alternative recreational and subsistence fishing opportunities in the area, we conclude impacts would be less than significant.

40. Environmental justice communities in the study area would experience cumulative impacts on fishing, including recreational and subsistence fishing due to fishing vessel traffic from the project along with additional impacts from the projects within the cumulative geographic scope for recreational and subsistence fishing.⁹⁷ Based on the

⁹² *Id.* at 4-153.

⁹³ *Id.* at 4-153.

⁹⁴ App. B Figs. 5-1-1 to 5-2-15.

⁹⁵ *Id.* at 4-153.

⁹⁶ *Id.* at 4-152.

⁹⁷ *Id.* at 4-274.

foregoing analysis, and due to the overall size of the waterway and existing alternative recreational and subsistence fishing opportunities in the area, we conclude that cumulative recreational and subsistence fishing impacts on environmental justice communities would be less than significant.

3. Tourism

41. Overall, the final EIS found that construction and operation of the project could impact local tourism as a result of increased noise, traffic along area roads, traffic within the Brownsville Ship Channel, as well as impacting visual resources in the area (primarily from the presence of the LNG aboveground structures in the viewshed).⁹⁸ Impacts on tourism may result in a loss of revenue or jobs for individuals from environmental justice communities. Noise during construction would likely be audible to boats passing through the Brownsville Ship Channel and could be audible to visitors within the South Bay Coastal Preserve, the closest designated recreation area to the project.⁹⁹ The final EIS found that increased LNG vessel traffic during operation would have a permanent but minor impact on marine traffic in the Brownsville Ship Channel.¹⁰⁰ LNG carriers transiting the Brownsville Ship Channel could also result in delays for charter boats and sightseeing tours.¹⁰¹ Visual impacts on some nearby recreation areas, such as the Laguna Atascosa National Wildlife Refuge are anticipated to be significant.¹⁰² Nevertheless, visual impacts are not anticipated to impact beach visitors, as the South Padre Island beaches face east towards the Gulf of Mexico, away from the project.¹⁰³ In addition, view of the project facilities from many area beaches would likely be obstructed by hotels and condominiums along the South Padre Island shore.¹⁰⁴ Visual impacts would affect charter boats and sightseeing tours transiting the Brownsville Ship Channel; however, it is anticipated that most recreational tours would be headed to the Laguna

⁹⁸ *Id.* at 4-152.

⁹⁹ *Id.* at 4-153.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *See infra* PP 79–82.

¹⁰³ Final EIS at 4-153.

¹⁰⁴ *Id.*

Madre or the Gulf of Mexico and would not be operating primarily within the Brownsville Ship Channel.¹⁰⁵

42. Given the number of tourism opportunities in the project area, tourists may go to other sites so that visitation patterns may change, but overall the number of visits to the project area would likely not change. Therefore, based on the foregoing analysis we conclude that impacts on environmental justice communities associated with tourism (e.g., loss of revenue or jobs related to tourism) would be less than significant.

43. Environmental justice communities in the study area would experience cumulative impacts on tourism from the Texas LNG Project,¹⁰⁶ as previously described, along with additional impacts from the additional projects within the cumulative geographic scope for tourism.¹⁰⁷ Cumulative impacts with the addition of those from the project would be less than significant,¹⁰⁸ and, given the availability of tourism opportunities further from the LNG facility and the additional project sites, we conclude overall cumulative tourism impacts on environmental justice communities would be less than significant.

4. Socioeconomics

44. As stated in the final EIS, construction of project would require an average monthly construction workforce of 700 workers, with a peak workforce of approximately 1,312 workers, over the 5-year construction period; Texas LNG anticipates that a majority of these workers would be hired locally and the remainder would be non-local.¹⁰⁹ Texas LNG anticipates that 110 non-local workers would be employed at the Texas LNG Project during operation. These additional workers would represent a negligible increase in the local population.¹¹⁰

45. During construction and operation, the temporary influx of workers/contractors into the area could increase the demand for community services, such as schools, police

¹⁰⁵ *Id.* at 4-153 to 4-154.

¹⁰⁶ *Id.* at 4-332 to 4-333.

¹⁰⁷ *Id.* at 4-274.

¹⁰⁸ *Id.* at 4-153 to 4-154.

¹⁰⁹ *Id.* at 4-143.

¹¹⁰ *Id.*

enforcement, and medical care, as well as housing.¹¹¹ As stated in the final EIS, impacts on community services would be less than significant.¹¹² In addition, an adequate number of housing units are available in the affected area; therefore, impacts on the local housing market would be less than significant.¹¹³ Based on the foregoing analysis we conclude socioeconomic impacts on environmental justice communities, due to an increased demand for community services and housing, would be less than significant.

46. Environmental justice communities in the study area would experience cumulative impacts on socioeconomic resources from the Texas LNG Project, along with additional impacts from other projects within the cumulative geographic scope for socioeconomic resources.¹¹⁴ Cumulative socioeconomic impacts with the addition of the project would be less than significant.¹¹⁵ Given that community facilities would continue to operate adequately and the existing availability of housing units in the affected geographic area, we conclude cumulative socioeconomic impacts on environmental justice communities would be less than significant.

5. Road Traffic

47. The final EIS finds that area residents may be affected by roadway traffic delays during construction of the Texas LNG Project.¹¹⁶ The total number of construction vehicles arriving and departing the facility per day during Texas LNG's proposed Phase 1 and Phase 2 construction plans would be 1,220 and 1,000, respectively, with up to 1,454 vehicles during peak construction of the project.¹¹⁷ Impacts on local users of the roadway network due to construction of the project include potential delays from increased traffic

¹¹¹ *Id.* at 4-146 to 4-148.

¹¹² *Id.* at 4-148. The final EIS also addresses impacts should Texas LNG hire more than 20% of its workforce from outside the local area. *Id.* at 4-146 to 4-147.

¹¹³ *Id.* at 4-147. The number of vacant housing units has increased since issuance of the Final EIS. U.S. Census Bureau 2020 Decennial Census, File H1, Occupancy Status.

¹¹⁴ Final EIS at 4-274.

¹¹⁵ *Id.* at 4-329.

¹¹⁶ *Id.* at 4-149.

¹¹⁷ *Id.*

levels and diminished roadway capacity.¹¹⁸ These impacts would most likely affect environmental justice communities near the LNG terminal site, such as Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1.¹¹⁹

48. To minimize impacts, Texas LNG proposes to construct an auxiliary lane by a contractor hired and paid for by Texas LNG prior to the start of construction, in order to minimize impacts on State Highway 48 users.¹²⁰ In addition, to minimize roadway traffic and safety hazards at the project site, Texas LNG proposes to coordinate with the Cameron County Sheriff's office to manually control the vehicle traffic during construction as a result of employees leaving the project site and turning left on State Highway 48.¹²¹

49. Sierra Club stated that the offsite parking locations impacts data provided by Texas LNG is inadequate.¹²² To ensure that parking location impacts data is adequately addressed and to further minimize impacts on roadway vehicle traffic associated with the project, Environmental Condition 22 of the Authorization Order required Texas LNG to file with the Commission a Traffic Management Plan prior to construction, for review and written approval by the Director of the Office of Energy Projects, that includes measures to minimize impacts on roadway traffic, including transporting workers from offsite locations via buses. Impacts on environmental justice communities will be evaluated as part of this approval.¹²³

50. Based on Texas LNG's proposed mitigation, including the construction of the auxiliary lane, and implementation of Environmental Condition 22, staff determined in the final EIS that the project would have moderate, but temporary impacts on roadway traffic.¹²⁴ Therefore, based on the foregoing analysis we conclude traffic impacts on

¹¹⁸ *Id.*

¹¹⁹ App. B Figs. 5-1-1 to 5-2-15.

¹²⁰ Final EIS at 4-150.

¹²¹ *Id.* at 4-149 to 4-150.

¹²² Sierra Club Oct. 19, 2022 Comments at 13.

¹²³ Authorization Order, 169 FERC ¶ 61,130 at Env't Condition 22.

¹²⁴ *Id.* at 4-150.

environmental justice communities, due to increased traffic on local roadways, would be less than significant.

51. Environmental justice communities in the study area would experience cumulative impacts associated with roadway vehicle construction traffic from the Texas LNG Project, as previously described, along with additional impacts from other projects within the cumulative geographic scope for roadway traffic.¹²⁵ As discussed above, impacts with the addition of the Texas LNG Project would be less than significant.¹²⁶ Based on the foregoing analysis, we conclude overall cumulative roadway traffic impacts on environmental justice communities would be less than significant.

6. Marine Traffic

52. According to the final EIS, over the 5-year construction period for the project, Texas LNG anticipates about 109 barge deliveries with a peak of approximately three deliveries per day.¹²⁷ Current vessel traffic in the Brownsville Ship Channel is about 1,057 vessels per year,¹²⁸ which equates to an average of about 88 vessels per month.¹²⁹ The additional barge deliveries trips associated with Texas LNG's construction would represent an increase of about two percent in current barge traffic and would not result in significant impacts on vessel traffic in the channel.¹³⁰ Therefore, based on the updated environmental justice analysis in response to the court remand, we conclude users of the channel from environmental justice communities would not be significantly impacted during construction.

53. According to the final EIS, permanent increases in marine traffic within the Brownsville Ship Channel would occur with the addition of six LNG carriers per month; however, the U.S. Coast Guard has determined that the waterway is suitable for the project LNG vessel use.¹³¹ Based on the foregoing analysis, we conclude recreational boaters and fishers within the Brownsville Ship Channel, which include individuals from

¹²⁵ *Id.* at 4-274.

¹²⁶ *Id.* at 4-331.

¹²⁷ Final EIS at 4-150.

¹²⁸ This number does not include commercial and recreational fishing vessels.

¹²⁹ *Id.* at 4-150.

¹³⁰ *Id.* at 4-151.

¹³¹ *Id.*

environmental justice communities, would not experience significant changes in marine traffic. Additionally, increased vessel traffic during construction and operation could increase shoreline erosion and suspended sediment concentrations due to changes in wave dynamics.¹³² Environmental justice communities in proximity to the project, particularly the communities in Census Tract 142.02, Block Group 2, Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1,¹³³ would be affected most by shoreline erosion and suspended sediment concentrations as they are located immediately adjacent to the Brownsville Ship Channel. Texas LNG would install rock armoring along the side slopes of the maneuvering basin to provide protection from propeller wash.¹³⁴ Use of the waterways by LNG carriers, barges, and support vessels during construction and operation of the project would be consistent with the planned purpose and existing use of active shipping channels, and associated impacts on shoreline erosion and water quality from resuspension of sediments due to vessel traffic would not be significant.¹³⁵

54. Environmental justice communities in the study area would experience cumulative impacts associated with marine traffic from the Texas LNG Project, as previously described, along with additional impacts from other projects within the cumulative geographic scope for marine traffic.¹³⁶ As discussed above, even with the addition of the Texas LNG Project, marine traffic impacts would be less than significant.¹³⁷ Based on the foregoing analysis, we conclude overall cumulative marine traffic impacts on environmental justice communities would be less than significant.

7. Noise

55. As stated in the final EIS, noise levels resulting from construction of the Texas LNG Project would vary over time and would depend on the number and type of equipment in operation, operating conditions, and the distances between sources and receptors during construction.¹³⁸ Texas LNG's proposed pile driving, dredging, and

¹³² *Id.* at 4-24.

¹³³ App. B Figs. 5-1-1 to 5-2-15.

¹³⁴ Final EIS at 4-24.

¹³⁵ *Id.*

¹³⁶ *Id.* at 4-274.

¹³⁷ *Id.* at 4-151.

¹³⁸ *Id.* at 4-192.

facility construction have the potential to produce noise impacts.¹³⁹ The closest noise sensitive areas (NSA) to the Texas LNG Project terminal within environmental justice communities are: NSA 1, about 1.6 miles north-northeast of the project and includes the residential area located off of Port Road, between Industrial Drive and Bahia Drive; NSA 2, about 1.6 miles north-northeast of the project and includes residences in the Pirate's Cove development, located off Port Road between Industrial Drive and Bahia Drive; and NSA 3, about 1.7 miles northeast of the project and includes the closest residences on the northwest end of West Scallop, located northeast of the project.¹⁴⁰

56. The predicted sound levels at the identified NSAs during all project construction activities, except for the proposed pile-driving activities, were lower than the Commission's noise standard of 55 decibels on the A-weighted scale (dBA) day-night sound level (Ldn).¹⁴¹ The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear; and 10 dBA is perceived as a doubling of noise.¹⁴² The increased sound from construction at NSA 1 would not exceed the 3 dBA threshold for human perception of noise change and the increased sound from construction at NSAs 2 and 3 would be 6 decibels and 5.7 decibels, respectively, and therefore may be perceptible.¹⁴³

57. Pile driving would occur for approximately 13 months, with peak pile driving activities occurring over 4 months, and was calculated to produce Ldn 24-hour equivalent sound levels that are below the Commission's noise criterion of 55 dBA at the nearest NSAs. The calculated maximum sound levels, or Lmax, of pile-driving (i.e., highest sound level during each hammer strike) would be similar to slightly above, the existing ambient noise levels. Although pile driving would be audible at nearby NSAs when ambient sound levels are low, Texas LNG would limit pile driving to only occur during daytime construction hours (typically 7 a.m. to 5 p.m.). The noise of pile-driving would be audible outside of residences, and potentially indoors in the homes closest to the project. Therefore, to ensure that impacts due to maximum pile driving noise levels at the project would be minimized, the Authorization Order requires Texas LNG to monitor

¹³⁹ *Id.*

¹⁴⁰ *Id.* at 4-189.

¹⁴¹ *Id.* at 4-194.

¹⁴² See Bies and Hansen, *Engineering Noise Control: Theory and Practice* at Table 2.1 (1988), <https://www.semanticscholar.org/paper/ENGINEERING-NOISE-CONTROL%3A-Theory-and-Practice-Bies-Hansen/23a7741e61d5b42d7da770b857054a50f1380648> (last visited March 2023).

¹⁴³ Final EIS at 4-194.

sound levels during the start of pile-driving activities.¹⁴⁴ If the sound levels due to pile-driving are greater than 10 dBA over the ambient sound levels, then Texas LNG is also required to cease that work, implement noise mitigation, and file evidence of reduced pile-driving sound levels.

58. Operational noise associated with the project would be persistent and would increase noise levels over ambient levels between 0.1 and 1.3 decibels at the closest NSAs.¹⁴⁵ Based on these estimates, the noise increase generated by the operation of the Texas LNG Project is not likely to be perceptible at nearby NSAs within environmental justice communities. In addition, Environmental Conditions 25 and 26 of the Authorization Order require Texas LNG to meet the Commission's sound level requirements. Based on the foregoing analysis, Texas LNG's estimate that operation of the project will not exceed the 3 dBA threshold for human perception of noise change at the nearest NSAs, and given the Authorization Order's conditions for measurement of construction and operational sound levels, we conclude the project would result in less than significant noise impacts on local residents and the surrounding communities,¹⁴⁶ including environmental justice populations.

59. For simultaneous construction activities, the final EIS stated that the predicted sound level increase over the existing ambient ranges from 2.2 to 9.8 dBA Ldn at the NSAs and sound levels of slightly over 55 dBA Ldn are predicted for NSAs C2, C3, and C5,¹⁴⁷ resulting in a minor to significant impact. For construction activities that are not simultaneous but incremental, the predicted sound level increase ranges from 1.0 to 8.6 dBA Ldn at the NSAs. These increases would result in a minor to moderate impact; however, all levels would be below 55 dBA Ldn. For Palmito Ranch Battlefield, Calculation Point-1 (CP-1), the predicted cumulative construction increase was 10.1 dBA Ldn over the existing ambient, resulting in a perceived doubling of loudness. For the Laguna Atascosa NWR, Calculation Point 2 (CP-2) there is a higher ambient sound level so the predicted increase due to cumulative construction noise would be 2.7 dBA Ldn, resulting in a less than noticeable increase.¹⁴⁸

60. The final EIS concluded that environmental justice communities in the study area would experience cumulative impacts related to noise from operation of the Texas LNG

¹⁴⁴ Authorization Order, 169 FERC ¶ 61,130 at app. Env't Condition 24.

¹⁴⁵ Final EIS at 4-197.

¹⁴⁶ *Id.* at 4-296.

¹⁴⁷ These NSAs are residences in proximity of the project. *Id.* at 4-346.

¹⁴⁸ *Id.* at 4-357.

Project, along with additional impacts from other projects within the cumulative geographic scope for noise.¹⁴⁹ The final EIS showed that for operational noise with all projects fully operational, the predicted sound level impacts are much lower than construction impacts, with potential increases over the existing ambient of between 0.3 and 1.5 dBA Ldn at NSAs, resulting in minor impacts. Operational impacts are slightly higher at two locations, the Palmito Ranch Battlefield, CP-1, and Laguna Atascosa NWR CP-2, with possible increases in sound levels due to operations of between 1.3 and 4.8 dBA Ldn. This is generally considered a minor to moderate long-term impact.¹⁵⁰ Based on the foregoing analysis, we conclude that overall cumulative noise impacts on environmental justice communities during construction and operation would be less than significant.

8. Safety

61. The Energy Policy Act of 2005 amended the NGA to require Emergency Response Plans and Cost Sharing Plans to be developed by the LNG terminal operator. During an incident, response decisions would be made by local emergency responders according to conditions as they exist at that time at the facility and in offsite areas. While the company may provide advice regarding hazards and potential impacts to the public, the emergency responders direct all response tactics, evacuation, sheltering in place, and public notification through an Incident Command System.

62. In order to further mitigate potential offsite risks,¹⁵¹ Environmental Conditions 36 and 37 of the Authorization Order require Texas LNG to prepare an Emergency Response Plan and Cost Sharing Plan, to be approved by Commission staff before Texas LNG receives its final approval to begin construction.¹⁵² Texas LNG's Emergency Response Plan is required to be developed in coordination with U.S. Coast Guard, state, county, and local emergency planning groups; fire departments; and state and local law enforcement. This ensures that Texas LNG works with the local emergency providers to

¹⁴⁹ *Id.* at 4-274.

¹⁵⁰ *Id.* at 4-356.

¹⁵¹ The Emergency Response Plans are considered the last layer of protection in a series of layers of protection evaluated by Commission staff to mitigate potential offsite risks. An evaluation of all layers of protection and recommendations to enhance the effectiveness and reliability of those safety layers of protection are described in the original final Environmental Impact Statement. These recommendations were adopted as conditions in the Authorization Order.

¹⁵² 15 U.S.C. § 717b-1(e) (requiring an emergency response plan for any order authorizing an LNG terminal).

identify resource needs based on the hazards that could be present due to the facility. The result is pre-incident planning to establish procedures, training, and capabilities that would be available to the Incident Commander as they decide how best to address a specific incident.

63. In response to Commission staff's data requests,¹⁵³ Texas LNG evaluated potential impacts from incidents identified along the LNG marine vessel transit route and at the LNG terminal,¹⁵⁴ including potential impacts to people with access and functional needs as defined in the National Fire Protection Association (NFPA) 1600, Standard on Continuity, Emergency, and Crisis Management¹⁵⁵ and NFPA 1616, Standard on Mass Evacuation, Sheltering, and Re-Entry Programs.¹⁵⁶ Separately, Commission staff performed an independent analysis¹⁵⁷ of potential safety impacts on environmental justice communities using conservative, worst-case distances in the modeling assumptions.¹⁵⁸

64. To ensure Texas LNG's Emergency Response Plan incorporates any special considerations and pre-incident planning for infrastructure and public with access and functional needs, including environmental justice communities, and, at a minimum, is

¹⁵³ Commission staff Aug. 16, 2022 Data Request; Commission Staff Aug. 31, 2022 Data Request.

¹⁵⁴ Texas LNG Sept. 15, 2022 Response to Commission staff Data Request; Texas LNG Sept. 21, 2022 Response to Commission staff Data Request; Texas LNG Oct. 10, 2022 Response to Commission staff Data Request.

¹⁵⁵ The NFPA standards are free and publicly accessible to view in English and Spanish on the NFPA website. NFPA, *NFPA 1600: Standard on Continuity, Emergency, and Crisis Management*, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1600>.

¹⁵⁶ NFPA, *NFPA 1616: Standard on Mass Evacuation, Sheltering, and Re-entry Programs*, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1616>.

¹⁵⁷ Appendix C includes additional discussion and details on Commission staff's environmental justice safety analysis.

¹⁵⁸ The block groups located within environmental justice communities that exceed the thresholds for minority and low income would include Census Tract 142.02, Block Group 2, Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 2, Census Tract 123.04, Block Group 4 (based on the minority and low-income thresholds); Census Tract 123.04, Block Group 3 (based on the minority threshold); and Census Tract 123.04 Block Group 1 (based on low-income threshold).

consistent with the recognized and generally accepted good engineering practices for evacuating and sheltering in place,¹⁵⁹ we modify Environmental Conditions 36 and 37 from the Authorization Order in Appendix A of this order. These modified conditions specify that Texas LNG's emergency response and cost sharing considerations require the preparation of public education materials, including for environmental justice communities, that identifies potential hazards and impacts, steps for notification, proposed evacuation routes and shelter in place locations. The plan must also provide for first responder training, emergency command centers and equipment, and public communication methods and devices. These conditions also require that Texas LNG periodically disseminate public education materials and that they be made available in English and Spanish.

65. We also clarify our expectation that certain Emergency Response Plan information be provided as public information. While the Commission has long required that certain contents of the plan be subject to public disclosure, this has been previously interpreted to mean the plan could be filed requesting privileged or CEII treatment and that the public could access this information through Freedom of Information Act procedures. We clarify the intent is for project sponsors to file certain Emergency Response Plan information as public so that surrounding communities are informed about the possible steps that an Incident Commander may require regarding notification, evacuation, and sheltering in place.

9. Air Quality

66. As discussed in the final EIS, construction of the Texas LNG Project would impact air quality.¹⁶⁰ The construction emissions are anticipated from operation of construction equipment, operation of the onsite concrete batch plants, deliveries of supplies by barge and truck, worker commutes, and land disturbance. Fugitive dust emissions would include contributions from general site construction work (a function of acreage impacted), earth-moving fugitive dust emissions (quantity of soil moved), and unpaved road travel (distance of travel and weight of vehicles). Fugitive dust would be produced primarily during the site preparation activities, when the site would be cleared of debris, leveled, and graded, including at proposed offsite facilities.¹⁶¹

67. The final EIS determined that construction air emissions from the project, when considered with background concentrations, combined with staged emissions impacts

¹⁵⁹ See app. C at P 2 (citing NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470, and NFPA 475).

¹⁶⁰ Final EIS at 4-175.

¹⁶¹ *Id.* at 4-175.

from commissioning, start-up, and operations of the project, could result in an exceedance of the NAAQS in the vicinity of the project for construction years when these emissions are taking place concurrently.¹⁶² Emissions from construction tend to be variable, depending primarily on the number, type, horsepower, and manufacture date of equipment, as well as the phase of construction. Construction emissions typically have a greater nearby impact due to the lower height of the exhaust, and the ground level emission from dust (as PM_{2.5} and PM₁₀). Therefore, emissions from construction of the Texas LNG Project would be highly localized and have the largest impact within a short radius around the construction footprint, but would disperse at further distances. Because pollutant concentrations decrease with distance, the dispersal of Texas LNG's construction emissions at the distance of the nearest residences (approximately 1.6 miles away)¹⁶³ should not result in adverse impacts on air quality. But construction emissions could be elevated at recreational areas near the LNG terminal site, such as the Laguna Atascosa National Wildlife Refuge, which has a border approximately 200 feet north of the project.¹⁶⁴

68. Texas LNG will implement the following mitigation measures to minimize construction impacts on air quality, including application of water to minimize fugitive dust, limiting engine idling, and using recent models of construction equipment manufactured to meet air quality standards.¹⁶⁵ Fugitive dust emissions would be minimized by Texas LNG through implementation of the Fugitive Dust Control Plan developed for the project.¹⁶⁶ Nevertheless, these fugitive dust emissions may still have an adverse impact, and may add to evaluated levels of PM_{2.5} and PM₁₀ during periods where construction, commissioning, and operation are concurrent. Additionally, commissioning activities are not steady-state operations and they can have an increased emission intensity during start up.

69. Texas LNG plans to commission and begin operations on the first completed liquefaction facilities while it continues to construct the remaining facilities; the simultaneous construction, commissioning and start-up, and operations at the project will result in periods of overlapping construction and operational emissions. As a result, Commission staff cannot exclude the possibility of short term ambient emission concentrations of PM_{2.5}, PM₁₀, and NO₂ at levels above the NAAQS at nearby public

¹⁶² *Id.*

¹⁶³ *Id.* at 4-323.

¹⁶⁴ *Id.* at 4-56.

¹⁶⁵ *Id.* at 4-336.

¹⁶⁶ *Id.* at 4-178.

recreational areas, such as the Laguna Atascosa National Wildlife Refuge. As such, to prevent such occurrences and to ensure protection of air quality for these areas, we are requiring, in Environmental Condition 130 in Appendix A of this order that Texas LNG take action to ensure that concurrent emissions during construction, commissioning and start-up, and operation of terminal facilities would not exceed the NAAQS.

70. Prior to commissioning, Texas LNG shall prepare and file a Project Ambient Air Quality Mitigation and Monitoring Plan for reducing the air quality impacts of overlapping construction, commissioning, and terminal operations. Such plan could include measures such as revising construction and commissioning schedules to reduce impacts. Texas LNG shall also include how it will monitor 1-hour NO₂, 24-hour PM₁₀, and 24-hour PM_{2.5} during this period. The plan must describe the site selection process for installing air quality monitors, and include procedures for data management and reporting. This monitoring will ensure that the mitigation measures implemented are effective in keeping emissions below the NAAQS, as specified in 40 C.F.R. pt. 50 (2022).

71. Based on Commission staff's updated environmental justice analysis, and the addition of Environmental Condition 130 in Appendix A of this order, we conclude that air quality impacts on environmental justice communities during construction of the Texas LNG Project would be less than significant.

72. The greatest potential for cumulative construction emissions impacts between Texas LNG and Rio Grande would be during years over overlapping construction. Simultaneous construction of the Rio Grande LNG and Texas LNG Terminals could result in a temporary, moderate to major increase in emissions of criteria pollutants in the immediate vicinity of the LNG terminal sites.¹⁶⁷ In addition, transport of construction materials associated with the Rio Grande LNG and Texas LNG Terminals would cumulatively add to regional emissions.¹⁶⁸ Both Texas LNG and Rio Grande would implement similar mitigation measures to minimize construction impacts. As noted above, construction emissions are localized, and impacts would be greatest in the immediate vicinity of the LNG terminal sites. During the time period when construction and operational activities at both facilities are taking place concurrently, there may be adverse impacts on air quality.¹⁶⁹ Because pollutant concentrations would decrease with distance from the project site, concurrent emissions would be unlikely to adversely impact air quality in residential areas, which are located 1.6 miles away or further. As

¹⁶⁷ *Id.* at 4-336. We note that since issuance of the final EIS, the proposed Annova LNG Project, included in the cumulative impact analysis, is no longer proposed.

¹⁶⁸ *Id.*

¹⁶⁹ Final EIS at 4-269.

previously described, although residential areas would not likely experience adverse air quality impacts, individuals from environmental justice communities fishing or otherwise recreating near the terminal may experience adverse air quality impacts. As discussed above, we are requiring Texas LNG to prepare a Project Ambient Air Quality Monitoring and Mitigation Plan as Environmental Condition 130 in Appendix A of this order, and a similar plan for Rio Grande LNG; thus, we conclude that cumulative construction air quality impacts on environmental justice communities would be less than significant.

73. In order to assess the impact of operational emissions from the Texas LNG Project facility on the air quality in environmental justice communities, Commission staff requested that Texas LNG provide a cumulative air model of the emissions. In response, Texas LNG provided a cumulative model that included all emissions from the Texas LNG Project, including mobile ship emissions (LNG carrier, tugs, escort vessels), relevant regional monitoring ambient background data, and existing and proposed regional industrial major sources within 50 kilometers of the project's fenceline boundary.¹⁷⁰ This also includes emissions from the authorized Rio Grande LNG Project terminal and its associated vessel emissions. The model provided worst-case concentration scenarios that were then compared to the NAAQS.

74. Table 2 in Appendix B displays the results from the cumulative model (combined operation of Texas LNG terminal, LNG vessel, and tugboat sources), which represents the worst-case scenario resulting in the maximum possible emissions. Under this cumulative modeling assessment, the highest predicted concentrations for CO, NO₂, PM_{2.5}, PM₁₀, and SO₂ were found to be below the NAAQS at all locations within 50 kilometers of the Texas LNG facility.¹⁷¹ Although the Texas LNG Project would cumulatively add to existing background concentrations of criteria air pollutants within the regional airshed, the total concentration of background plus modeled emissions from sources within this 50-kilometer radius, including emissions from both the Texas LNG and Rio Grande LNG Project terminals, would remain under applicable NAAQS thresholds, which are meant to protect sensitive populations. In the final EIS, Commission staff analyzed the impact of emissions of ozone precursors—NO_x and VOC—by comparing them to the analysis of ozone impacts for the Rio Grande LNG Project, whose projected emission of those precursors was ten times larger. The analysis for the Rio Grande LNG Project showed that the 8-hour maximum predicted increase in

¹⁷⁰ The background inventory data were obtained from Texas Commission on Environmental Quality.

¹⁷¹ The modeling indicates that lead emissions are not a measurable amount and thus Commission staff omitted them from further analysis.

ozone concentration would not result in an exceedance of the 8-hour ozone NAAQS.¹⁷² Because the Texas LNG Project would contribute less than 10% of the annual NOx emissions estimated for the Rio Grande LNG terminal, Commission staff concluded that the Texas LNG facility would also not result in a NAAQS exceedance for ozone.¹⁷³ Moreover, in order to analyze the cumulative impact of the proposed LNG facilities, Commission staff reasoned that if the maximum predicted increase of ozone concentration estimated for the Rio Grande LNG terminal is increased by 10% (to account for Texas LNG's NOx emissions), the cumulative impact would remain below the 8-hour ozone NAAQS. We agree and conclude that there would not be a significant cumulative impact with respect to 8-hour ozone during operation of the facility.

75. Both the Texas LNG and Rio Grande LNG Projects would be in compliance with the NAAQS during operations¹⁷⁴ and the NAAQS are designated to protect sensitive populations.¹⁷⁵ The operation of the projects when combined with the other projects within the cumulative geographic scope for air quality¹⁷⁶ would not cause or contribute to a potential exceedance of the NAAQS on a regional or localized basis.¹⁷⁷ Based on the

¹⁷² Final EIS for Rio Grande LNG, Docket No. CP16-454-000, at 4-269.

¹⁷³ Final EIS at 4-339.

¹⁷⁴ Air quality modeling of criteria pollutants for both LNG terminals reviewed impacts on a regional and local scale and did not identify any areas of NAAQS thresholds exceedance that would be attributable to the LNG terminals. Texas LNG Jan. 30, 2023 Response to Commission staff Jan. 6, 2023 Environmental Information Request at Tables 9-5 and 9-6, and Rio Grande Jan. 27, 2023 Response to Commission staff Jan. 6, 2023 Environmental Information Request, Rio Grande LNG Project Air Dispersion Modeling Report.

¹⁷⁵ The combustion of natural gas produces the criteria pollutants regulated by NAAQS as well as volatile organic compounds including hazardous air pollutant chemicals known to cause health impacts. Final EIS at 4-163 to 4-164. The Texas LNG terminal is a minor source of hazardous air pollutants and is required to comply with certain general provisions for minor area sources under the Clean Air Act. The Rio Grande LNG facility is a major source of hazardous air pollutants and must comply with the Clean Air Act National Emission Standards for Hazardous Air Pollutants for stationary sources at the LNG terminal.

¹⁷⁶ Final EIS. at 4-274.

¹⁷⁷ Texas LNG Jan. 30, 2023 Response to Commission staff Jan. 6, 2023 Environmental Information Request at Tables 9-5 and 9-6, and Rio Grande Jan. 27, 2023 Response to Commission staff Jan. 6, 2023 Environmental Information Request, Rio

foregoing analysis, we conclude environmental justice communities would not experience significant air quality impacts during operation of the Texas LNG Project.

76. Sierra Club commented on an air model filed by Texas LNG on August 16, 2022, questioning some of the emission data (for example, why Texas LNG's estimates for the hoteling of LNG vessels was greater than the estimates for the maneuvering of LNG vessels).¹⁷⁸ Commission staff requested, on February 3, 2022, Texas LNG to provide a model of emissions from the Texas LNG facility, but exclude the Rio Grande facility. On August 16, 2022, we further requested the Texas LNG to provide the impact of only Texas LNG (worst-case scenario) at each census block and to provide the worst-case modeled background concentrations for each census block. Sierra Club's October 19, 2022 comments relate to this model. Nevertheless, in order to analyze the impacts properly, Commission staff requested, on January 6, 2023, that Texas LNG work with Rio Grande LNG to provide a full cumulative model to determine the maximum concentrations attributable to the operation of the Rio Grande LNG Terminal and Texas LNG Terminal, and therefore a consistent methodology to assess the cumulative air quality impact, including background concentrations from mobile ship emissions and all other sources within 50 kilometers, from simultaneous operation of both terminals. . Texas LNG filed this model on January 30, 2023, and Commission staff relied on this updated model in its analysis above.

77. Citizens filed comments about the risks of air pollution to communities populated by marginalized people and indigenous people. The analysis presented here addresses air quality impacts on environmental justice communities and on all communities within 50 kilometers of the proposed facility. Commission staff concluded that there would be no significant impact on air quality from the proposed facility based on refined cumulative air modeling.

10. Visual Impacts

78. Sierra Club commented that the Commission has not requested sufficient information to analyze the visual impacts of the Texas LNG Project. In fact, Commission staff conducted a comprehensive visual impacts analysis for the project during the preparation of the EIS for this project. As stated in the final EIS, the project site and adjoining lands along State Highway 48 are undeveloped and primarily comprised of open lands and tidal flats with isolated lomas (clay dunes).¹⁷⁹ Impacts on visual resources may occur during construction of the LNG terminal when increased equipment, vehicles,

Grande LNG Project Air Dispersion Modeling Report.

¹⁷⁸ Sierra Club Oct. 19, 2022 Comments at 7.

¹⁷⁹ *Id.* at 4-112.

soil disturbance, import of fill, and construction of the LNG terminal are visible to local residents and visitors, including individuals from environmental justice communities,¹⁸⁰ particularly the communities located in Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, Census Tract 123.04, Block Group 4, and Census Tract 123.05, Block Group 1, which are closest to the project.¹⁸¹

79. Impact on visual resources would also occur during operation to the extent that facilities or portions of facilities and their lighting are visible to residents and visitors.¹⁸² Texas LNG assessed potential operational impacts on the viewshed and found that from five key observation points, including recreation areas, residential areas, and roadways, by producing visual simulations of the project facilities during the day, at night, and during flaring events.¹⁸³ While the Texas LNG Project, especially the storage tanks and flares, would be visible from most of the key observation points located in environmental justice communities, it would generally not dominate the viewshed.¹⁸⁴ Nevertheless, the Texas LNG Project would dominate the daytime and nighttime viewshed at State Highway 48 and at the Laguna Atascosa National Wildlife Refuge, and the project facilities would be prominent at the Loma Ecological Preserve, which are in environmental justice communities.¹⁸⁵ The project facilities would also likely be visible from some residences in Port Isabel and South Padre Island, which are in environmental justice communities. South Padre Island, in particular, has numerous high-rise condominiums that would have views of the project facilities, especially from the higher floors.¹⁸⁶ In addition to residences, the project facilities would be visible from sightseeing tours that operate within the Brownsville Ship Channel.¹⁸⁷ As the Commission previously determined, due to the relatively undeveloped nature of the

¹⁸⁰ *Id.*

¹⁸¹ App. B Figs. 5-1-1 to 5-2-15.

¹⁸² Final EIS at 4-112.

¹⁸³ *Id.* at 4-115 to 4-118.

¹⁸⁴ *Id.* Key observation points include State Highway 48 (Laguna Atascosa National Wildlife Refuge), Port Isabel State Historic Site, Isla Blanca Park, Palo Alto Battlefield National Historic Park, and Palmito Ranch Battlefield National Historic Landmark.

¹⁸⁵ *Id.*

¹⁸⁶ *Id.* at 4-141.

¹⁸⁷ *Id.*

project area, the visual sensitivity of nearby recreation areas, and the inability to implement visual screening measures due to the size and scale of the proposed facility, the project would result in a significant impact on visual resources when viewed from the Laguna Atascosa National Wildlife Refuge, which is within an environmental justice community and would have a negligible to moderate impact on the other visual resources evaluated.¹⁸⁸

80. Texas LNG would minimize visual impacts from lighting by implementing measures outlined in its Facility Lighting Plan, including shielding lights, using lights designed to minimize glare, and using timers and motion detection sensors where feasible.¹⁸⁹ Several light reduction techniques would also be implemented including limiting the amount of outdoor lighting installed, dimming lights at night, and directing lights downward.¹⁹⁰ Despite these mitigation measures, based on the location of the project facility and the foregoing analysis, we conclude visual impacts on environmental justice communities would be significant.

81. As the Commission previously determined, the Texas LNG Project would result in temporary to permanent and negligible to significant impacts on the viewshed. Other projects constructed within the geographic scope Texas LNG Project would also contribute to cumulative impacts on the viewshed with the Texas LNG Project.¹⁹¹ Consistent with the Commission's earlier visual impacts analysis, we conclude that overall potential significant cumulative visual resources impacts, including on environmental justice communities, would occur, along with additional impacts from the projects within the cumulative geographic scope for visual resources.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 4-112.

¹⁹⁰ *Id.* at 4-199 to 4-200.

¹⁹¹ *Id.* at 4-326 to 4-327.

11. Environmental Justice Conclusion

82. As described in the final EIS, the Texas LNG Project will have a range of impacts on the environment and individuals living in the vicinity of the project facilities, including environmental justice communities. As detailed above, we revised the scope of our analysis to include analyses commensurate with the associated impact. Out of 284 block groups identified within a 50-kilometer radius of the Texas LNG Project, 279 block groups were considered environmental justice communities. The closest environmental justice block groups are Census Tract 142.02, Block Group 2 and Census Tract 127, Block Group 2, and Census Tract 123.04, Block Group 4, which abut the Texas LNG Project terminal. These block groups would be the most impacted and impacts would diminish as the distance from the project increases. We have determined that certain impacts from construction and operation of the project would be disproportionately high and adverse, as impacts would be predominately borne by environmental justice communities. As concluded in the final EIS and above, environmental justice communities within the project area may experience significant project-related and cumulative visual impacts. Project-related impacts associated with wetlands, surface water, recreational and subsistence fishing, tourism, socioeconomics, traffic, noise, and air quality would be less than significant.

IV. Conclusion

83. In conformance with the court's opinion, in this order on remand, we respond to the arguments pertaining to whether the use of the social cost of GHGs is required by CEQ's regulations and disclose the social cost of GHG calculations for informational purposes, but, as discussed, we do not characterize the significance of the projects' GHG emissions. Additionally, consistent with CEQ and EPA guidance, the Commission conducted a new environmental justice analysis with updated units of geographic analysis for assessing the project's impacts on environmental justice communities. We conclude that the impacts on environmental justice populations from the project would be disproportionately high and adverse because they would be predominately borne by the environmental justice communities identified and, specifically, communities in the areas near the Texas LNG Project may experience significant visual impacts, as well as significant cumulative visual impacts; but that all other project-related impacts would be less than significant.

84. We continue to find that the project, as conditioned in the Authorization Order and as modified herein, is an environmentally acceptable action.

85. Further, as stated above, we continue to find that, under section 3 of the NGA, the Texas LNG Project is not inconsistent with the public interest.

86. Compliance with the environmental conditions appended to our orders is integral to ensuring that the environmental impacts of approved projects are consistent with those anticipated by our environmental analyses. Thus, Commission staff carefully reviews all information submitted. Only when satisfied that the applicant has complied with all applicable conditions will a notice to proceed with the activity to which the conditions are relevant be issued. We also note that the Commission has the authority to take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project, including authority to impose any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order, as well as the avoidance or mitigation of unforeseen adverse environmental impacts resulting from project construction and operation.

87. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this authorization. The Commission encourages cooperation between Texas LNG and local authorities. However, this does not mean that state and local agencies, through application of state or local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by this Commission.¹⁹²

88. At a hearing held on April 20, 2023, the Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application, applicant data responses, and exhibits therein, and all comments, and upon consideration of the record,

The Commission orders:

(A) The Commission affirms its earlier determinations that the Texas LNG Project is not inconsistent with the public interest.

(B) The authorization in Ordering Paragraph (A) is conditioned on Texas LNG's compliance with the environmental conditions set forth in the appendix to the Authorization Order and Appendix A of this order

¹⁹² See 15 U.S.C. § 717r(d) (state or federal agency's failure to act on a permit considered to be inconsistent with Federal law); see also *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 310 (1988) (state regulation that interferes with FERC's regulatory authority over the transportation of natural gas is preempted); *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 245 (D.C. Cir. 2013) (noting that state and local regulation is preempted by the NGA to the extent it conflicts with federal regulation, or would delay the construction and operation of facilities approved by the Commission).

(C) Texas LNG shall notify the Commission's environmental staff by telephone or e-mail of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Texas LNG. Texas LNG shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

By the Commission. Commissioner Phillips is concurring with a separate statement attached.

Commissioner Clements is dissenting with a separate statement attached.

(S E A L)

Debbie-Anne A. Reese,
Deputy Secretary.

Appendix A

Texas LNG Project Modified Environmental Conditions 36 and 37 and Additional Environmental Condition 130

Texas LNG shall continue to comply with the environmental conditions set forth in the appendix to the Commission's Authorization Order, 169 FERC ¶ 61,130 (2019). In addition this order modifies conditions 36 and 37; and includes condition 130:

36. **Prior to construction of final design**, Texas LNG shall file with the Secretary, for review and approval by the Director of the Office of Energy Projects, or their designee, an Emergency Response Plan, including evacuation and any sheltering and re-entry, and coordinate procedures with the U.S. Coast Guard; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and other appropriate federal agencies. This plan shall be consistent with recommended and good engineering practices, as defined in National Fire Protection Association (NFPA) 1600, NFPA 1616, NFPA 1620, NFPA 470, NFPA 475, or approved equivalents, and based on potential impacts and onsets of hazards from accidental and intentional events along the liquefied natural gas (LNG) marine vessel route and potential impacts and onset of hazards from accidental and intentional events at the LNG terminal, including but not limited to a catastrophic failure of the largest LNG tank. This plan shall address any special considerations and pre-incident planning for infrastructure and public with access and functional needs and shall include at a minimum:
- a. materials and plans for periodic dissemination of public education and training materials in English and Spanish for potential hazards and impacts, identification of potential hazards, and steps for public notification, evacuation, and shelter in place within any transient hazard areas along the marine vessel route, and within LNG terminal hazard areas in the event of an incident;
 - b. plans to competently train emergency responders required to effectively and safely respond to hazardous material incidents including, but not limited to LNG fires and dispersion;
 - c. plans to competently train emergency responders to effectively and safely evacuate or shelter public within transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;
 - d. designated contacts with federal, state and local emergency response agencies responsible for emergency management and response within any

transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;

- e. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;
- f. scalable procedures for mobilizing response and establishing a unified command, including identification, location, and design of any emergency operations centers and emergency response equipment required to effectively and safely to respond to hazardous material incidents and evacuate or shelter public within transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;
- g. scalable procedures for notifying public, including identification, location, design, and use of any permanent sirens or other warning devices required to effectively communicate and warn the public prior to onset of debilitating hazards within any transient hazard areas along the LNG marine vessel route and within hazard areas from LNG terminal;
- h. scalable procedures for evacuating the public, including identification, location, design, and use of evacuation routes/methods and any mustering locations required to effectively and safely evacuate public within any transient hazard areas along the LNG marine transit route and within hazard areas from LNG terminal; and
- i. scalable procedures for sheltering the public, including identification, location, design, and use of any shelters demonstrated to be needed and demonstrated to effectively and safely shelter public prior to onset of debilitating hazards within transient hazard areas that may better benefit from sheltering in place (i.e., those within Zones of Concern 1 and 2), along the route of the LNG marine vessel and within hazard areas that may benefit from sheltering in place (i.e., those within areas of 1,600 BTU/ft²-hr and 10,000 BTU/ft²-hr radiant heats from fires with farthest impacts, including from a catastrophic failure of largest LNG tank) of the LNG terminal.

Texas LNG shall notify the Commission staff of all planning meetings in advance and shall report progress on the development of its Emergency Response Plan **at 3-month intervals**. Texas LNG shall file with the Secretary public versions of offsite emergency response procedures for public notification, evacuation, and shelter in place.

37. **Prior to construction of final design**, Texas LNG shall file with the Secretary for review and written approval by the Director of the Office of Energy Projects, or the Director's designee, a Cost-Sharing Plan identifying the mechanisms for funding all Project-specific security/emergency management costs that would be imposed on state and local agencies. This comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. This plan shall include sustained funding of any requirement or resource gap analysis identified to effectively and safely evacuate and shelter public and to effectively and safely respond to hazardous material incidents consistent with recommended and good engineering practices. Texas LNG shall notify FERC staff of all planning meetings in advance and shall report progress on the development of its Cost Sharing Plan **at 3-month intervals**.
130. **Prior to commissioning**, Texas LNG shall file with the Secretary, for review and written approval by the Director of the Office of Energy Projects, or the Director's designee, a Project Ambient Air Quality Mitigation and Monitoring Plan for periods when construction, commissioning and start-up, and operation of the LNG Terminal occur simultaneously. To ensure that concurrent emissions during construction, commissioning and start-up, and operation of terminal facilities are effectively mitigated, the plan's thresholds for concentrations of particulate matter (PM_{2.5} and PM₁₀) and nitrogen oxide (NO₂) must be established based on the National Ambient Air Quality Standards (NAAQS), as specified in 40 C.F.R. Part 50 and shall:
- a. include a monitoring plan for PM_{2.5}, PM₁₀, and NO₂, including a description of the site selection process for the proposed locations for air quality monitors; data management; reporting; and protocols to manage any potential exceedances of the NAAQS for PM_{2.5}, PM₁₀, and NO₂ that may be observed during the monitoring activities;
 - b. detail what measures Texas LNG will implement should the levels of PM_{2.5} or PM₁₀ exceed the NAAQS 24-hour limit or should the levels of NO₂ exceed the NAAQS 1-hour limit as specified in 40 C.F.R. Part 50; and
 - c. provide that Texas LNG will file weekly reports during periods when the plan is in use, documenting the duration of any exceedances, reasons for elevated levels of PM_{2.5}, PM₁₀, or NO₂, actual measured values, and to the extent there are exceedances, what minimization or mitigation measures Texas LNG implemented to reduce these levels and documentation of a reduction to or below the threshold(s).

Appendix B

Environmental Justice Tables and Figures

Docket No. CP16-116-002

B- 2 -

Table 1
Texas LNG Project
Minority Populations by Race and Low-Income Populations
Within 50 km of Terminal Site

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
Cameron County	420,554	8.5	0.4	0.7	0.1	0.0	0.1	0.3	90.0	91.5	25.3
<i>CT 101.01, BG 1</i>	1,295	4.2	0.0	2.2	0.0	0.0	0.0	0.0	93.5	95.8	32.4
<i>CT 101.01, BG 2</i>	1,582	16.7	0.0	0.0	1.0	0.0	0.0	0.0	82.3	83.3	2.4
<i>CT 101.01, BG 3</i>	835	16.2	0.0	0.0	0.0	0.0	0.0	2.9	81.0	83.8	25.9
<i>CT 101.02, BG 1</i>	501	79.8	0.0	2.4	0.0	0.0	0.0	5.0	12.8	20.2	21.5
<i>CT 101.02, BG 2</i>	847	22.1	0.0	0.0	0.0	0.0	0.0	0.0	77.9	77.9	70.4
<i>CT 101.02, BG 3</i>	310	4.5	0.0	0.0	0.0	0.0	0.0	0.0	95.5	95.5	36.2
<i>CT 101.03, BG 1</i>	868	5.9	0.0	0.0	0.0	0.0	0.0	0.0	94.1	94.1	11.3
<i>CT 101.03, BG 2</i>	1,519	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	11.3

Docket No. CP16-116-002

B- 3 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 102.01, BG 1</i>	1,403	16.7	0.0	0.0	0.0	0.0	0.0	0.0	83.3	83.3	16.0
<i>CT 102.01, BG 2</i>	465	2.4	0.0	0.0	0.0	0.0	0.0	0.0	97.6	97.6	30.4
<i>CT 102.04, BG 1</i>	1,792	22.8	0.0	0.0	0.0	0.0	0.0	0.0	77.2	77.2	16.5
<i>CT 102.04, BG 2</i>	2,412	27.1	0.0	8.3	0.0	0.0	0.0	0.0	64.6	72.9	40.3
<i>CT 102.05, BG 1</i>	1,430	8.3	0.5	0.0	0.0	0.0	0.0	0.0	91.2	91.7	19.3
<i>CT 102.05, BG 2</i>	744	47.2	0.0	2.6	0.0	0.0	0.0	0.0	50.2	52.8	0.0
<i>CT 105.00, BG 1</i>	401	12.5	0.0	0.0	0.0	0.0	0.0	0.0	87.5	87.5	3.9
<i>CT 105.00, BG 2</i>	2,361	2.5	0.0	0.2	0.0	0.0	0.0	0.0	97.3	97.5	21.4
<i>CT 106.02, BG 1</i>	1,691	29.5	0.9	3.4	0.0	0.0	0.0	2.9	63.3	70.5	7.9
<i>CT 106.03, BG 1</i>	1,576	3.9	0.0	0.0	0.0	0.0	0.0	0.0	96.1	96.1	29.4
<i>CT 106.03, BG 2</i>	1,316	13.2	0.8	0.0	0.0	0.0	0.0	0.0	86.0	86.8	20.3
<i>CT 106.03, BG 3</i>	1,929	16.2	0.4	0.0	0.0	0.0	0.0	0.0	83.4	83.8	43.6

Docket No. CP16-116-002

B- 4 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 106.04, BG 2</i>	1,558	14.4	0.0	7.6	0.0	0.0	0.0	0.0	78	85.6	24.0
<i>CT 106.04, BG 3</i>	1,442	12.3	0.0	0.0	5.3	0.0	0.0	1.4	81.1	87.7	25.7
<i>CT 107.00, BG 1</i>	1,286	4.4	0.0	0.0	0.0	0.0	0.0	1.1	94.5	95.6	10.5
<i>CT 107.00, BG 2</i>	880	20.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	80.0	36.5
<i>CT 107.00, BG 3</i>	1,164	9.9	0.0	0.0	0.0	6.2	0.0	0.0	83.9	90.1	13.7
<i>CT 108.01, BG 1</i>	1,054	13.0	0.0	0.0	0.0	0.0	0.0	0.0	87.0	87.0	26.6
<i>CT 108.01, BG 2</i>	1,329	16.0	0.5	0.0	2.0	0.0	0.0	0.0	81.6	84.0	3.1
<i>CT 108.01, BG 3</i>	1,978	1.9	0.0	0.0	0.0	0.0	0.0	0.0	98.1	98.1	42.7
<i>CT 108.02, BG 1</i>	2,485	6.4	1.7	0.0	0.6	0.0	0.0	0.0	91.2	93.6	37.4
<i>CT 108.02, BG 2</i>	967	18.2	0.0	0.0	0.0	0.0	0.0	0.0	81.8	81.8	23.5
<i>CT 108.02, BG 3</i>	614	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 109.00, BG 1</i>	387	6.5	5.2	2.1	0.0	0.0	0.0	2.3	84.0	93.5	28.0

Docket No. CP16-116-002

B- 5 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 109.00, BG 2</i>	980	5.9	0.0	0.0	0.0	0.0	0.0	2.3	91.7	94.1	29.0
<i>CT 110.00, BG 1</i>	783	15.3	0.0	0.0	0.0	0.0	0.0	0.0	84.7	84.7	49.1
<i>CT 110.00, BG 2</i>	632	5.9	0.0	0.0	0.0	0.0	0.0	0.0	94.1	94.1	49.6
<i>CT 110.00, BG 3</i>	1,445	2.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	98.0	49.0
<i>CT 111.00, BG 1</i>	509	20.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	80.0	30.7
<i>CT 111.00, BG 2</i>	1,435	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	99.7	30.0
<i>CT 111.00, BG 3</i>	672	10.0	17.0	0.0	0.0	0.0	0.0	0.0	73.1	90.0	15.6
<i>CT 112.00, BG 1</i>	892	4.6	0.0	0.0	0.0	0.0	0.0	0.0	95.4	95.4	29.7
<i>CT 112.00, BG 2</i>	772	13.5	0.0	0.0	0.0	0.0	0.0	0.0	86.5	86.5	31.3
<i>CT 113.01, BG 1</i>	755	40.5	0.0	0.0	0.0	0.0	0.0	0.0	59.5	59.5	3.0
<i>CT 113.01, BG 2</i>	560	22.9	0.0	0.0	0.0	0.0	0.0	0.0	77.1	77.1	30.5
<i>CT 113.02, BG 1</i>	1,511	18.6	4.3	0.0	0.0	0.0	0.0	5.4	71.7	81.4	8.0

Docket No. CP16-116-002

B- 6 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 113.02, BG 2</i>	1,362	26.8	1.4	10.9	0.0	0.0	0.0	0.0	60.9	73.2	9.8
<i>CT 113.02, BG 3</i>	1,980	25.0	6.7	4.3	0.0	0.0	0.0	0.0	64.0	75.0	1.1
<i>CT 114.01, BG 1</i>	664	29.8	0.0	0.0	0.0	0.0	0.0	0.0	70.2	70.2	13.4
<i>CT 114.01, BG 2</i>	1,127	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	12.2
<i>CT 114.01, BG 3</i>	1,750	13.6	1.7	0.0	0.0	0.0	0.0	0.0	84.7	86.4	8.6
<i>CT 114.02, BG 1</i>	1,289	10.0	0.0	0.0	0.0	0.0	0.0	0.0	90.0	90.0	9.3
<i>CT 114.02, BG 2</i>	753	16.9	0.0	0.0	0.0	0.0	0.0	0.0	83.1	83.1	18.9
<i>CT 114.02, BG 3</i>	685	29.6	0.0	0.0	0.0	0.0	0.0	0.0	70.4	70.4	26.4
<i>CT 115.00, BG 1</i>	580	6.9	0.0	0.0	0.0	0.0	0.0	0.0	93.1	93.1	30.0
<i>CT 115.00, BG 2</i>	848	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	38.6
<i>CT 115.00, BG 3</i>	1,178	2.4	0.3	0.0	0.0	0.0	0.0	0.0	97.4	97.6	32.4
<i>CT 115.00, BG 4</i>	530	7.5	0.0	0.0	0.0	0.0	0.0	0.0	92.5	92.5	19.2

Docket No. CP16-116-002

B- 7 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 115.00, BG 5</i>	2,969	2.7	0.0	0.0	0.0	0.0	0.0	0.0	97.3	97.3	26.9
<i>CT 116.01, BG 1</i>	723	3.0	0.0	0.0	0.0	0.0	0.0	0.0	97.0	97.0	51.8
<i>CT 116.01, BG 2</i>	1,724	0.9	0.4	0.0	0.0	0.0	0.0	0.0	98.7	99.1	24.7
<i>CT 116.02, BG 1</i>	1,024	15.4	0.0	0.0	0.0	2.0	0.0	0.0	82.6	84.6	24.4
<i>CT 116.02, BG 2</i>	2,194	3.5	0.0	0.0	0.0	0.0	0.0	0.0	96.5	96.5	34.5
<i>CT 117.01, BG 1</i>	1,075	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	35.7
<i>CT 117.01, BG 2</i>	3,466	5.3	0.5	0.0	0.0	0.0	0.0	0.0	94.3	94.7	29.6
<i>CT 117.02, BG 1</i>	2,220	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	27.9
<i>CT 117.02, BG 2</i>	551	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	38.0
<i>CT 117.02, BG 3</i>	1,185	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	24.6
<i>CT 118.01, BG 1</i>	1,505	6.3	1.5	2.7	0.0	0.0	0.0	0.0	89.4	93.7	51.1
<i>CT 118.01, BG 2</i>	1,782	1.3	0.0	0.0	1.6	0.0	0.0	0.0	97.0	98.7	4.5

Docket No. CP16-116-002

B- 8 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 118.01, BG 3</i>	512	34.2	1.8	0.0	0.0	0.0	0.0	0.0	64.1	65.8	60.5
<i>CT 118.01, BG 4</i>	1,665	14.2	1.6	1.1	0.0	0.0	0.0	0.0	83.1	85.8	18.6
<i>CT 118.02, BG 1</i>	753	3.2	1.5	0.0	0.0	0.0	0.0	1.9	93.5	96.8	36.3
<i>CT 118.02, BG 2</i>	1,885	3.6	1.1	0.0	0.0	0.0	0.0	0.0	95.4	96.4	46.6
<i>CT 118.02, BG 3</i>	1,619	11.4	0.0	2.2	0.0	0.0	0.0	0.6	85.9	88.6	28.7
<i>CT 120.02, BG 1</i>	823	34.0	0.0	0.0	0.0	0.0	0.0	0.0	66.0	66.0	7.3
<i>CT 120.02, BG 4</i>	907	16.2	0.4	0.0	0.0	0.0	0.0	0.0	83.4	83.8	5.8
<i>CT 120.03, BG 3</i>	1,370	17.7	3.5	2.9	0.0	0.0	0.0	0.0	75.8	82.3	32.5
<i>CT 121.03, BG 1</i>	461	89.2	0.0	8.2	0.0	0.0	0.0	0.0	2.6	10.8	0.0
<i>CT 121.04, BG 1</i>	2,052	12.0	0.0	4.7	0.0	0.8	0.0	0.4	82.1	88.0	2.9
<i>CT 121.04, BG 2</i>	1,940	5.6	0.0	0.0	0.0	0.0	0.0	0.0	94.4	94.4	12.1
<i>CT 121.04, BG 3</i>	720	6.0	0.0	0.0	0.0	0.0	0.0	0.0	94.0	94.0	4.4

Docket No. CP16-116-002

B- 9 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 121.05, BG 1</i>	1,784	4.3	0.0	0.0	0.0	0.0	0.0	0.0	95.7	95.7	10.5
<i>CT 121.05, BG 2</i>	920	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	99.7	14.7
<i>CT 121.06, BG 1</i>	462	11.0	0.0	0.0	0.0	0.0	0.0	0.0	89.0	89.0	52.7
<i>CT 121.06, BG 2</i>	985	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	39.9
<i>CT 122.01, BG 1</i>	244	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	45.8
<i>CT 122.01, BG 2</i>	1,469	13.5	24.2	0.0	0.0	0.0	0.2	0.1	62.0	86.5	28.6
<i>CT 122.01, BG 3</i>	1,502	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	19.8
<i>CT 122.02, BG 1</i>	1,178	1.4	0.1	0.0	0.0	0.0	0.0	0.0	98.5	98.6	25.9
<i>CT 122.02, BG 2</i>	1,181	8.4	0.0	0.0	0.0	0.0	0.1	0.4	91.1	91.6	21.2
<i>CT 122.02, BG 3</i>	704	6.8	0.0	0.0	0.0	0.0	0.3	0.0	92.9	93.2	16.7
<i>CT 122.03, BG 1</i>	1,042	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	27.4
<i>CT 122.03, BG 2</i>	371	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	34.7

Docket No. CP16-116-002

B- 10 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 122.03, BG 3</i>	2,764	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	99.7	34.4
<i>CT 123.01, BG 1</i>	1,666	56.9	0.0	0.8	0.0	0.0	0.0	0.0	42.3	43.1	17.1
<i>CT 123.01, BG 2</i>	909	49.5	2.6	0.0	1.2	0.0	0.0	0.0	46.6	50.5	25.3
<i>CT 123.01, BG 3</i>	325	29.8	0.0	0.0	28.6	0.0	0.0	0.0	41.5	70.2	0.0
<i>CT 123.01, BG 4</i>	1,319	65.8	0.0	0.0	0.0	0.0	0.0	0.3	33.9	34.2	27.8
<i>CT 123.04, BG 1</i>	588	37.2	0.0	0.0	0.0	0.0	0.0	0.0	62.8	62.8	29.6
<i>CT 123.04, BG 2</i>	1,689	6.6	0.0	0.0	0.0	0.0	0.0	0.0	93.4	93.4	28.9
<i>CT 123.04, BG 3</i>	955	37.8	0.0	0.0	0.0	0.0	0.0	1.4	60.8	62.2	11.3
<i>CT 123.04, BG 4</i>	630	11.6	0.0	11.4	0.0	0.0	0.0	0.0	77.0	88.4	37.3
<i>CT 123.05, BG 1</i>	2,454	71.5	4.2	2.2	0.0	0.0	1.9	1.5	18.8	28.5	6.0
<i>CT 124.02, BG 1</i>	1,907	10.2	0.0	0.0	0.0	0.0	0.0	0.0	89.8	89.8	27.0
<i>CT 124.02, BG 2</i>	313	0.6	0.0	0.0	0.0	0.0	0.0	0.0	99.4	99.4	24.3

Docket No. CP16-116-002

B- 11 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 124.02, BG 3</i>	1,108	12.0	0.0	0.0	0.0	0.0	0.0	0.0	88.0	88.0	58.8
<i>CT 124.02, BG 4</i>	2,515	8.3	0.0	0.0	0.0	0.0	0.0	0.0	91.7	91.7	49.2
<i>CT 124.03, BG 1</i>	1,437	20.2	0.0	0.0	0.0	0.0	0.0	0.0	79.8	79.8	19.8
<i>CT 124.03, BG 2</i>	2,623	8.0	0.0	0.0	0.0	0.0	0.0	0.0	92.0	92.0	16.5
<i>CT 124.04, BG 1</i>	598	4.3	0.0	0.0	0.0	0.0	0.0	0.0	95.7	95.7	10.9
<i>CT 124.04, BG 2</i>	1,963	3.2	0.0	0.0	0.0	0.0	0.0	0.0	96.8	96.8	46.7
<i>CT 124.04, BG 3</i>	1,000	12.4	0.0	0.0	0.0	0.0	0.0	0.0	87.6	87.6	9.7
<i>CT 125.06, BG 1</i>	1,371	3.8	0.0	0.0	0.0	0.0	0.0	0.0	96.2	96.2	13.8
<i>CT 125.06, BG 2</i>	1,263	27.3	0.0	3.5	0.0	0.0	0.0	0.0	69.2	72.7	11.4
<i>CT 125.06, BG 3</i>	1,484	28.1	0.0	0.3	2.1	0.0	0.0	0.0	69.5	71.9	9.8
<i>CT 125.08, BG 1</i>	1,051	26.6	0.0	0.0	0.0	0.0	0.0	0.0	73.4	73.4	14.7
<i>CT 125.08, BG 2</i>	2,993	2.7	0.0	0.8	0.2	0.0	0.0	0.0	96.4	97.3	21.0

Docket No. CP16-116-002

B- 12 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 125.09, BG 1</i>	495	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	40.1
<i>CT 125.09, BG 2</i>	3,024	3.9	0.0	0.0	0.0	0.0	0.0	0.0	96.1	96.1	24.1
<i>CT 125.10, BG 1</i>	1,998	0.0	0.0	0.0	0.0	0.0	0.0	4.0	96.0	100.0	24.3
<i>CT 125.10, BG 2</i>	1,338	7.0	0.0	0.0	0.0	0.0	0.0	0.0	93.0	93.0	13.9
<i>CT 125.10, BG 3</i>	1,858	1.7	0.0	0.0	0.0	0.0	0.0	0.0	98.3	98.3	42.9
<i>CT 125.11, BG 1</i>	1,199	1.8	0.0	0.0	0.0	0.0	0.0	0.0	98.2	98.2	31.2
<i>CT 125.11, BG 2</i>	1,747	5.6	0.0	0.0	0.0	0.0	0.0	0.0	94.4	94.4	0.0
<i>CT 125.11, BG 3</i>	2,629	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	29.4
<i>CT 125.12, BG 1</i>	971	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	47.3
<i>CT 125.12, BG 2</i>	1,527	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	33.3
<i>CT 125.13, BG 1</i>	2,260	5.7	0.0	0.0	0.4	0.0	0.0	0.2	93.7	94.3	29.0
<i>CT 125.13, BG 2</i>	1,172	12.6	0.0	0.0	0.0	0.0	0.0	0.0	87.4	87.4	35.7

Docket No. CP16-116-002

B- 13 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 125.14, BG 1</i>	2,787	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	8.5
<i>CT 125.14, BG 2</i>	2,536	14.4	0.0	0.0	0.0	0.0	0.0	0.0	85.6	85.6	18.1
<i>CT 125.15, BG 1</i>	1,669	4.8	0.0	2.6	0.0	0.0	0.0	0.0	92.6	95.2	0.0
<i>CT 125.15, BG 2</i>	1,251	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	15.4
<i>CT 125.16, BG 1</i>	946	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 125.16, BG 2</i>	300	8.7	0.0	0.0	0.0	0.0	0.0	0.0	91.3	91.3	0.0
<i>CT 125.16, BG 3</i>	1,671	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 125.17, BG 1</i>	1,550	5.2	0.0	0.0	0.0	0.0	0.0	0.0	94.8	94.8	11.5
<i>CT 125.17, BG 2</i>	951	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 125.17, BG 3</i>	1,400	2.9	0.0	0.0	0.0	0.0	0.0	0.0	97.1	97.1	26.1
<i>CT 126.07, BG 1</i>	1,467	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	99.7	22.4
<i>CT 126.07, BG 2</i>	1,121	1.1	0.0	0.0	0.0	0.0	0.0	0.0	98.9	98.9	48.6

Docket No. CP16-116-002

B- 14 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 126.08, BG 1</i>	1,530	0.5	0.4	0.0	0.0	0.0	0.0	0.0	99.1	99.5	34.3
<i>CT 126.08, BG 2</i>	819	5.9	0.0	0.0	0.0	0.0	0.0	0.0	94.1	94.1	37.5
<i>CT 126.08, BG 3</i>	2,578	2.1	1.6	4.3	0.0	0.0	0.0	0.0	91.9	97.9	9.3
<i>CT 126.08, BG 4</i>	283	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>CT 126.13, BG 1</i>	1,038	7.4	0.0	0.0	0.0	0.0	0.0	0.0	92.6	92.6	15.3
<i>CT 126.13, BG 2</i>	705	3.7	0.7	7.1	0.0	0.0	0.0	0.0	88.5	96.3	7.6
<i>CT 126.13, BG 3</i>	2,377	5.8	0.0	1.6	0.0	0.0	0.0	1.2	91.4	94.2	10.9
<i>CT 126.13, BG 4</i>	1,570	2.3	5.3	2.8	0.0	0.0	0.0	0.8	88.9	97.7	36.3
<i>CT 126.14, BG 1</i>	1,353	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	37.5
<i>CT 126.14, BG 2</i>	1,725	1.3	0.0	0.0	0.0	0.0	0.0	0.0	98.7	98.7	47.1
<i>CT 126.15, BG 1</i>	918	2.2	0.0	0.0	0.0	0.0	0.0	0.0	97.8	97.8	36.3
<i>CT 126.15, BG 2</i>	1,128	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	28.3

Docket No. CP16-116-002

B- 15 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 126.15, BG 3</i>	1,067	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	36.5
<i>CT 126.16, BG 1</i>	1,959	5.5	0.6	0.0	2.0	0.0	0.0	0.0	92.0	94.5	3.0
<i>CT 126.16, BG 2</i>	1,719	1.7	0.5	0.0	0.0	0.0	0.0	0.0	97.7	98.3	9.0
<i>CT 126.17, BG 1</i>	1,095	1.4	0.0	0.0	0.0	0.0	0.0	0.0	98.6	98.6	37.2
<i>CT 126.17, BG 2</i>	1,494	1.1	0.0	6.5	0.0	0.0	0.0	0.0	92.4	98.9	4.9
<i>CT 126.17, BG 3</i>	818	8.3	0.0	0.0	0.0	0.0	0.0	0.0	91.7	91.7	26.1
<i>CT 127.00, BG 1</i>	1,370	0.6	0.0	0.0	0.0	0.0	0.0	0.0	99.4	99.4	27.7
<i>CT 127.00, BG 2</i>	611	4.9	0.0	0.0	0.0	0.0	0.0	0.0	95.1	95.1	29.8
<i>CT 127.00, BG 3</i>	1,535	1.3	0.0	0.0	0.0	0.0	0.0	0.0	98.7	98.7	31.3
<i>CT 127.00, BG 4</i>	1,954	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	54.1
<i>CT 128.00, BG 1</i>	1,167	8.3	0.0	0.0	0.0	0.0	0.0	0.0	91.7	91.7	32.5
<i>CT 128.00, BG 2</i>	1,067	12.7	5.0	0.0	0.0	0.0	0.0	0.0	82.3	87.3	12.9

Docket No. CP16-116-002

B- 16 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 128.00, BG 3</i>	1,099	1.0	0.0	0.0	0.0	0.0	0.0	0.0	99.0	99.0	33.9
<i>CT 128.00, BG 4</i>	1,575	1.6	0.0	0.0	0.0	0.0	0.0	0.0	98.4	98.4	21.1
<i>CT 12.009, BG 1</i>	899	17.8	0.0	0.0	0.0	0.0	0.0	0.0	82.2	82.2	35.6
<i>CT 129.00, BG 2</i>	416	22.8	0.0	0.0	0.0	0.0	0.0	0.0	77.2	77.2	17.0
<i>CT 129.00, BG 3</i>	2,387	5.6	0.0	0.0	0.0	0.0	0.0	0.0	94.4	94.4	41.1
<i>CT 129.00, BG 4</i>	717	24.7	2.1	0.0	0.0	0.0	0.0	0.0	73.2	75.3	29.2
<i>CT 130.02, BG 1</i>	1,073	7.1	0.0	0.0	0.0	0.0	0.0	0.0	92.9	92.9	22.4
<i>CT 130.02, BG 2</i>	1,053	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	98.8	21.1
<i>CT 130.02, BG 3</i>	718	8.2	0.0	0.0	0.0	0.0	0.0	0.0	91.8	91.8	29.8
<i>CT 130.02, BG 4</i>	1,730	5.1	0.0	0.0	0.0	0.0	0.0	0.0	94.9	94.9	49.3
<i>CT 130.03, BG 1</i>	757	4.0	0.0	0.0	0.0	0.0	0.0	0.0	96.0	96.0	42.7
<i>CT 130.03, BG 2</i>	1,467	4.8	1.2	0.0	0.5	0.0	5.4	1.2	87.0	95.2	44.5

Docket No. CP16-116-002

B- 17 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 130.04, BG 1</i>	876	11.8	0.0	3.1	0.0	0.0	0.0	1.3	83.9	88.2	17.9
<i>CT 130.04, BG 2</i>	654	14.8	0.0	1.1	0.0	0.0	0.0	0.0	84.1	85.2	22.6
<i>CT 130.04, BG 3</i>	692	1.7	0.0	0.0	0.0	0.0	0.0	0.0	98.3	98.3	25.5
<i>CT 131.02, BG 1</i>	620	15.6	0.0	0.0	0.0	0.0	0.0	0.0	84.4	84.4	0.0
<i>CT 131.02, BG 2</i>	1,417	2.9	0.0	0.0	0.0	0.0	0.0	0.0	97.1	97.1	5.1
<i>CT 131.02, BG 3</i>	2,360	12.8	0.0	1.0	0.0	0.0	0.0	0.0	86.2	87.2	25.0
<i>CT 131.04, BG 1</i>	1,485	6.9	0.0	0.5	0.0	0.0	0.0	0.0	92.6	93.1	0.0
<i>CT 131.04, BG 2</i>	862	12.1	0.0	1.0	0.0	0.0	0.0	1.9	85.0	87.9	0.0
<i>CT 131.04, BG 3</i>	982	3.3	0.0	0.0	0.0	0.0	0.0	0.0	96.7	96.7	37.3
<i>CT 131.06, BG 1</i>	1,848	0.5	0.0	0.0	0.0	0.0	0.0	0.0	99.5	99.5	58.5
<i>CT 131.06, BG 2</i>	1,789	1.5	0.0	0.0	0.0	0.0	0.0	0.0	98.5	98.5	27.1
<i>CT 131.06, BG 3</i>	1,113	3.6	0.0	2.7	0.0	0.0	0.0	0.0	93.7	96.4	31.9

Docket No. CP16-116-002

B- 18 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 132.03, BG 1</i>	1,521	2.2	0.0	0.0	0.0	0.0	0.0	1.9	95.9	97.8	42.2
<i>CT 132.03, BG 2</i>	778	0.9	0.0	0.0	0.0	0.0	0.0	0.0	99.1	99.1	35.7
<i>CT 132.04, BG 1</i>	1,015	3.8	0.0	0.0	0.0	0.0	0.0	0.0	96.2	96.2	44.4
<i>CT 132.04, BG 2</i>	810	0.0	0.0	0.0	0.0	0.0	1.6	0.0	98.4	100.0	26.1
<i>CT 132.05, BG 1</i>	1,865	0.7	0.0	0.0	0.0	0.0	0.0	0.5	98.8	99.3	21.7
<i>CT 132.05, BG 2</i>	2,103	0.5	0.0	0.0	0.0	0.0	0.0	0.0	99.5	99.5	48.6
<i>CT 132.06, BG 1</i>	851	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	36.7
<i>CT 132.06, BG 2</i>	927	2.8	0.0	0.0	0.0	0.0	0.0	0.0	97.2	97.2	33.2
<i>CT 132.06, BG 3</i>	897	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	25.6
<i>CT 132.07, BG 1</i>	1,894	5.6	0.0	0.0	0.0	0.0	0.0	0.0	94.4	94.4	17.8
<i>CT 132.07, BG 2</i>	1,724	3.9	0.0	0.0	0.0	0.0	0.0	0.0	96.1	96.1	36.8
<i>CT 132.07, BG 3</i>	952	7.9	0.0	0.0	0.0	0.0	0.0	0.0	92.1	92.1	44.3

Docket No. CP16-116-002

B- 19 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 133.03, BG 1</i>	925	0.9	0.0	1.3	0.0	1.8	0.0	0.0	96.0	99.1	2.0
<i>CT 133.03, BG 2</i>	1,587	0.6	0.0	0.0	0.0	0.0	0.0	0.0	99.4	99.4	35.6
<i>CT 133.03, BG 3</i>	1,640	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	39.4
<i>CT 133.05, BG 1</i>	1099	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	98.8	20.1
<i>CT 133.05, BG 2</i>	1,144	0.4	0.0	0.0	0.0	0.0	0.0	0.0	99.6	99.6	20.2
<i>CT 133.05, BG 3</i>	1,311	2.9	0.0	0.0	0.0	0.0	0.0	0.0	97.1	97.1	25.6
<i>CT 133.05, BG 4</i>	736	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	26.7
<i>CT 133.06, BG 1</i>	966	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	38.4
<i>CT 133.06, BG 2</i>	1,627	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	21.7
<i>CT 133.07, BG 1</i>	856	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	30.6
<i>CT 133.07, BG 2</i>	1,297	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	41.8
<i>CT 133.08, BG 1</i>	1,436	4.5	0.0	0.0	0.0	0.0	0.0	0.0	95.5	95.5	21.4

Docket No. CP16-116-002

B- 20 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 133.08, BG 2</i>	546	2.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	98.0	37.8
<i>CT 133.08, BG 3</i>	1,595	0.6	0.0	0.0	0.0	0.0	0.0	0.0	99.4	99.4	46.0
<i>CT 133.09, BG 1</i>	1,293	2.0	0.0	0.0	0.0	0.0	0.0	0.0	98.0	98.0	37.8
<i>CT 133.09, BG 2</i>	1,705	0.4	0.0	0.0	0.0	0.0	0.0	0.0	99.6	99.6	44.8
<i>CT 134.01, BG 1</i>	1,336	0.9	0.0	0.0	0.0	0.0	0.0	0.0	99.1	99.1	46.7
<i>CT 134.01, BG 2</i>	772	3.5	0.0	0.0	0.0	0.0	0.0	0.0	96.5	96.5	36.5
<i>CT 134.02, BG 1</i>	767	0.3	0.0	0.0	0.0	0.0	0.0	0.0	99.7	99.7	23.2
<i>CT 134.02, BG 2</i>	655	13.3	0.0	0.0	0.0	0.0	0.0	0.0	86.7	86.7	21.8
<i>CT 134.02, BG 3</i>	616	0.0	0.0	1.1	0.0	0.0	0.0	0.0	98.9	100.0	51.6
<i>CT 135.00, BG 1</i>	1,185	17.0	0.5	0.9	0.0	0.0	0.0	0.0	81.5	83.0	4.4
<i>CT 135.00, BG 2</i>	843	1.8	0.0	0.0	0.0	0.0	0.0	0.0	98.2	98.2	24.3
<i>CT 136.00, BG 1</i>	327	11.0	0.0	0.0	0.0	0.0	0.0	0.0	89.0	89.0	64.6

Docket No. CP16-116-002

B- 21 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 136.00, BG 2</i>	1,148	7.5	0.6	0.0	0.0	0.0	0.0	0.0	91.9	92.5	9.5
<i>CT 136.00, BG 3</i>	801	3.4	0.0	0.0	0.0	0.0	0.0	0.0	96.6	96.6	18.2
<i>CT 136.00, BG 4</i>	486	11.9	0.0	0.2	0.0	0.0	0.0	0.0	87.9	88.1	36.7
<i>CT 137.00, BG 1</i>	623	7.5	0.0	0.0	0.0	0.0	0.0	0.0	92.5	92.5	14.1
<i>CT 137.00, BG 2</i>	490	2.7	0.0	0.0	0.0	0.0	0.0	0.0	97.3	97.3	60.8
<i>CT 137.00, BG 3</i>	935	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	66.7
<i>CT 137.00, BG 4</i>	1,859	2.7	0.0	0.0	0.0	0.0	0.0	0.0	97.3	97.3	46.6
<i>CT 138.01, BG 1</i>	574	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	98.8	56.2
<i>CT 138.01, BG 2</i>	1,602	4.1	4.2	0.0	0.0	0.0	0.0	0.5	91.3	95.9	65.0
<i>CT 138.02, BG 1</i>	448	1.8	0.0	0.0	0.0	0.0	0.0	0.0	98.2	98.2	35.7
<i>CT 138.02, BG 2</i>	551	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	39.7
<i>CT 138.02, BG 3</i>	984	8.4	0.5	0.0	0.0	0.0	0.0	0.0	91.1	91.6	56.7

Docket No. CP16-116-002

B- 22 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 138.02, BG 4</i>	876	3.8	0.0	0.0	0.0	0.0	0.0	0.0	96.2	96.2	32.9
<i>CT 139.01, BG 1</i>	396	5.1	0.0	0.0	0.0	0.0	0.0	0.0	94.9	94.9	52.0
<i>CT 139.01, BG 2</i>	1,976	1.6	0.0	0.0	0.0	0.0	0.0	0.0	98.4	98.4	35.9
<i>CT 139.02, BG 1</i>	1,323	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	20.5
<i>CT 139.02, BG 2</i>	1,679	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	98.8	33.8
<i>CT 139.02, BG 3</i>	1,295	3.1	0.0	3.0	0.0	0.0	0.0	0.0	93.9	96.9	43.0
<i>CT 139.03, BG 1</i>	2,185	0.0	0.0	1.1	0.0	0.0	0.0	0.0	98.9	100.0	43.6
<i>CT 139.03, BG 2</i>	2,231	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	32.8
<i>CT 140.01, BG 1</i>	937	0.5	0.0	0.0	0.0	0.0	0.0	0.0	99.5	99.5	25.7
<i>CT 140.01, BG 2</i>	989	0.0	0.0	0.0	0.0	0.0	0.0	0.5	99.5	100.0	78.3
<i>CT 140.01, BG 3</i>	430	5.8	0.0	7.4	0.0	0.0	7.4	11.2	68.1	94.2	61.2
<i>CT 140.02, BG 1</i>	1,130	10.0	0.0	0.0	0.0	0.0	0.0	0.0	90.0	90.0	35.5

Docket No. CP16-116-002

B- 23 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 140.02, BG 2</i>	918	12.0	0.2	0.0	0.0	0.0	0.0	0.0	87.8	88.0	60.2
<i>CT 141.01, BG 1</i>	1,031	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	14.1
<i>CT 141.01, BG 2</i>	1,039	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 141.01, BG 3</i>	1,373	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	40.0
<i>CT 141.01, BG 4</i>	833	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	28.3
<i>CT 141.02, BG 1</i>	2,221	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	51.9
<i>CT 141.02, BG 2</i>	694	1.2	0.0	0.0	0.0	0.0	0.0	0.0	98.8	98.8	9.5
<i>CT 141.02, BG 3</i>	1,126	12.8	0.0	0.0	0.0	0.0	0.0	0.0	87.2	87.2	58.1
<i>CT 141.03, BG 1</i>	1,278	3.4	0.0	0.0	0.0	0.0	0.0	0.0	96.6	96.6	10.5
<i>CT 141.03, BG 2</i>	95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 141.03, BG 3</i>	1,573	8.5	0.0	0.0	0.0	0.0	0.0	0.0	91.5	91.5	46.2
<i>CT 142.01, BG 1</i>	942	0.7	0.0	0.0	0.0	0.0	0.0	0.0	99.3	99.3	54.3

Docket No. CP16-116-002

B- 24 -

GEOGRAPHIC AREA AND POPULATION		RACE AND ETHNICITY									LOW-INCOME
State/ County/ Census Tract/ Block Group	Population	White (Not Hispanic) (%)	Black or African American (%)	Asian (%)	American Indian and Alaskan Native (%)	Native Hawaiian and Other Pacific Islander (%)	Some other race (%)	Two or more races (%)	Hispanic or Latino (%)	Total Minority ^b (%)	Below Poverty Level ^b (%)
State of Texas	28,862,581	40.7	11.8	5.0	0.2	0.1	0.3	2.3	39.8	59.3	13.3
<i>CT 142.01, BG 2</i>	822	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	10.1
<i>CT 142.02, BG 1</i>	1897	14.3	0.0	0.0	0.0	0.0	0.0	0.0	85.7	85.7	19.2
<i>CT 142.02, BG 2</i>	1103	0.0	0.0	0.0	0.0	0.0	7.8	0.0	92.2	100.0	44.9
<i>CT 143.00, BG 1</i>	1,726	5.0	0.0	0.0	0.0	0.0	0.0	6.7	88.4	95.0	43.6
<i>CT 143.00, BG 2</i>	2,057	3.7	0.0	0.0	0.0	0.0	0.0	0.0	96.3	96.3	52.8
<i>CT 143.00, BG 3</i>	1,036	9.3	0.0	0.0	0.0	0.0	0.0	0.0	90.7	90.7	28.4
<i>CT 144.01, BG 1</i>	1,997	1.2	0.0	0.7	0.0	0.0	0.0	0.0	98.1	98.8	4.4
<i>CT 144.01, BG 2</i>	4,337	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	17.8
<i>CT 144.01, BG 3</i>	1,223	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0
<i>CT 144.02, BG 1</i>	2,819	21.1	0.0	0.0	0.0	0.0	0.0	0.0	78.9	78.9	3.4
<i>CT 144.02, BG 2</i>	1,291	8.7	0.0	0.0	0.0	0.0	0.0	0.0	91.3	91.3	16.3
<i>CT 144.02, BG 3</i>	1,958	5.0	0.0	0.0	0.0	0.0	0.0	0.0	95.0	95.0	11.1

Docket No. CP16-116-002

B- 25 -

[illegible]

Docket No. CP16-116-002

B- 26 -

[illegible]

Source: U.S. Census Bureau (2021), American Community Survey 5-year Estimates 2017-2021, File # B17017 and File # B03002.a

“Minority” refers to people who reported their ethnicity and race as something other than non-Hispanic White.

^b Minority or low-income populations exceeding the established thresholds are indicated in bold type and gray shading.

Due to rounding differences in the dataset, the totals may not reflect the sum of the addends.

Docket No. CP16-116-002

B- 27 -

Table 2
Texas LNG Project
Results of the Cumulative Impact Analysis – Hoteling Scenario

Pollutant	Averaging Period	Highest Predicted Concentration (Max Impact)	Ambient Background Values ⁽¹⁾	Direction of Max Impact from TX LNG	Distance of Max Impact from TX LNG	NAAQS	Over NAAQS?	Maximum TX LNG Impact ⁽⁵⁾
		($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)		(km)	($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$)
CO	1-hour	6,867.45	3,778.50	SW	5.40	40,000	No	951.23
	8-hour	4,545.67	2,175.50	SW	5.40	10,000	No	120.37
NO ₂	1-hour	147.78	⁽²⁾	SE	0.38	188	No	124.55
	Annual	9.60	4.72	S	0.53	100	No	4.79
PM ₁₀	24-hour	112.99	69.67	SW	15.36	150	No	4.04
PM _{2.5}	24-hour ⁽³⁾	32.29	⁽²⁾	NW	43.50	35	No	3.33
	Annual ⁽⁴⁾	11.75	10.13	SW	15.74	12	No	0.17
SO ₂	1-hour	140.96	14.85	W	25.48	196	No	10.80
	3-hour	96.41	5.24	W	25.48	1,300	No	53.37
	24-hour	21.34	3.14	W	25.48	365	No	6.85
	Annual	5.19	1.36	SW	5.40	80	No	0.92

Notes:

(1) Ambient background values are included in the Highest Predicted Concentration (Maximum Impact) values.

(2) Seasonal/diurnal background data were developed for use in the 1-hour NO₂ modeling analysis; seasonal background data were developed for use in the 24-hour PM_{2.5} modeling analysis. Table 9-4 of the Final EIS summarizes the PM_{2.5} seasonal background concentrations that were developed based on the three-year average of seasonal 98th percentile 24-hr monitor values.

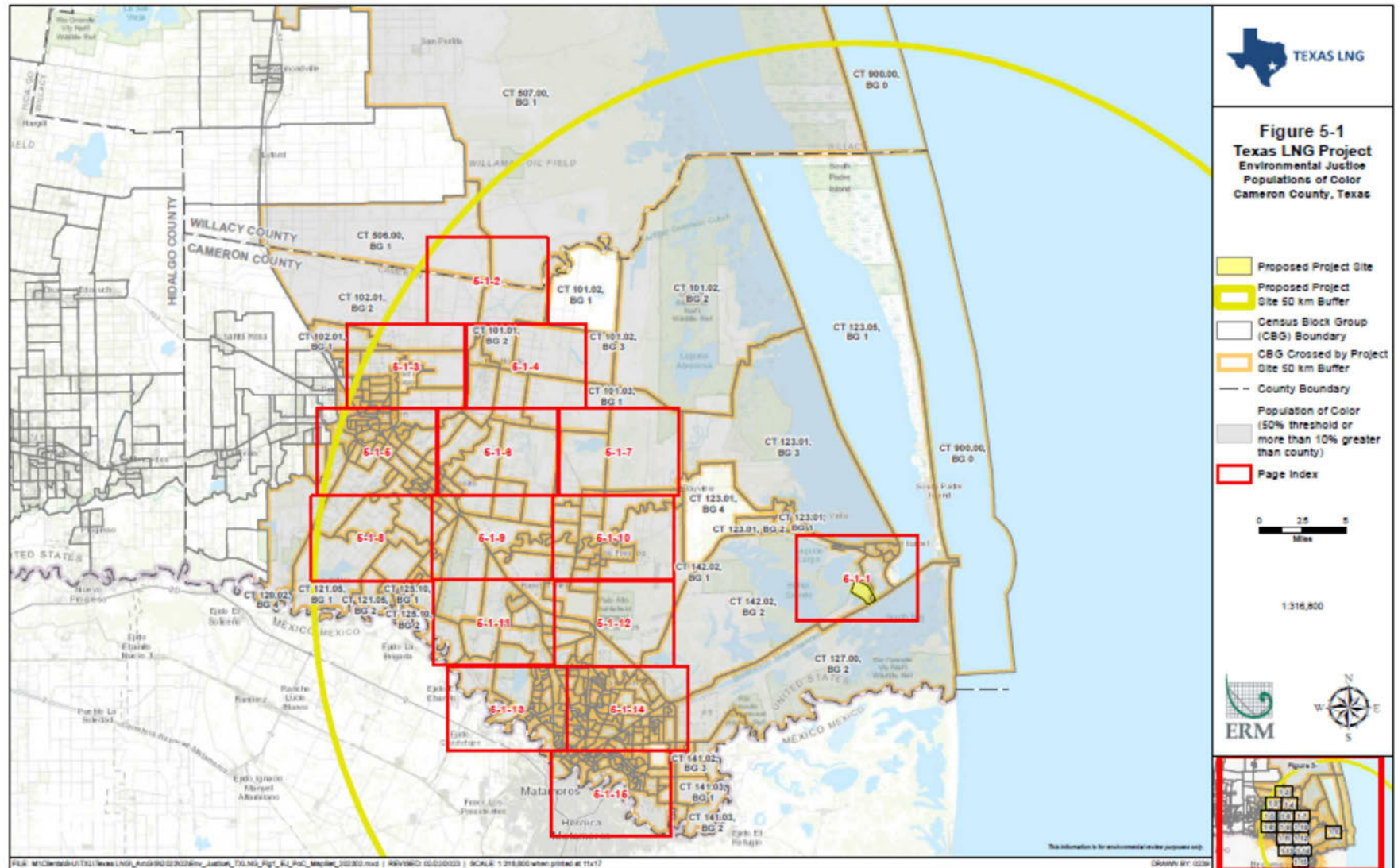
(3) Secondary 24-hour PM_{2.5} impact of 0.2617 $\mu\text{g}/\text{m}^3$ added to the Maximum Impact and Texas LNG Impact.

(4) Secondary annual PM_{2.5} impact of 0.0077 $\mu\text{g}/\text{m}^3$ added to the Maximum Impact and Texas LNG Impact.

(5) Maximum Texas LNG contribution that could occur anywhere or anytime on the grid. The Texas LNG impact is not paired in time or space with the peak concentration.

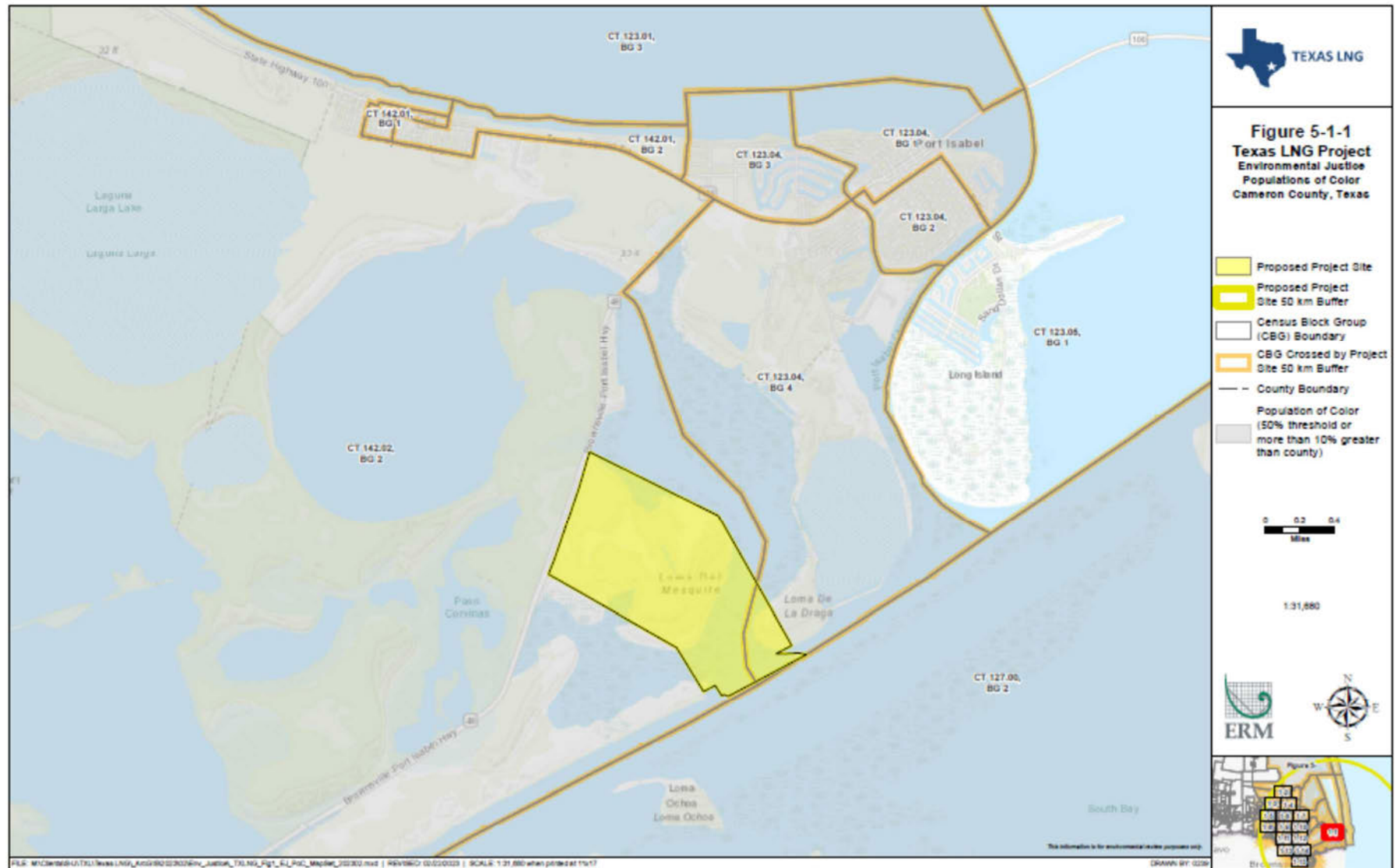
Docket No. CP16-116-002

B- 28 -



Docket No. CP16-116-002

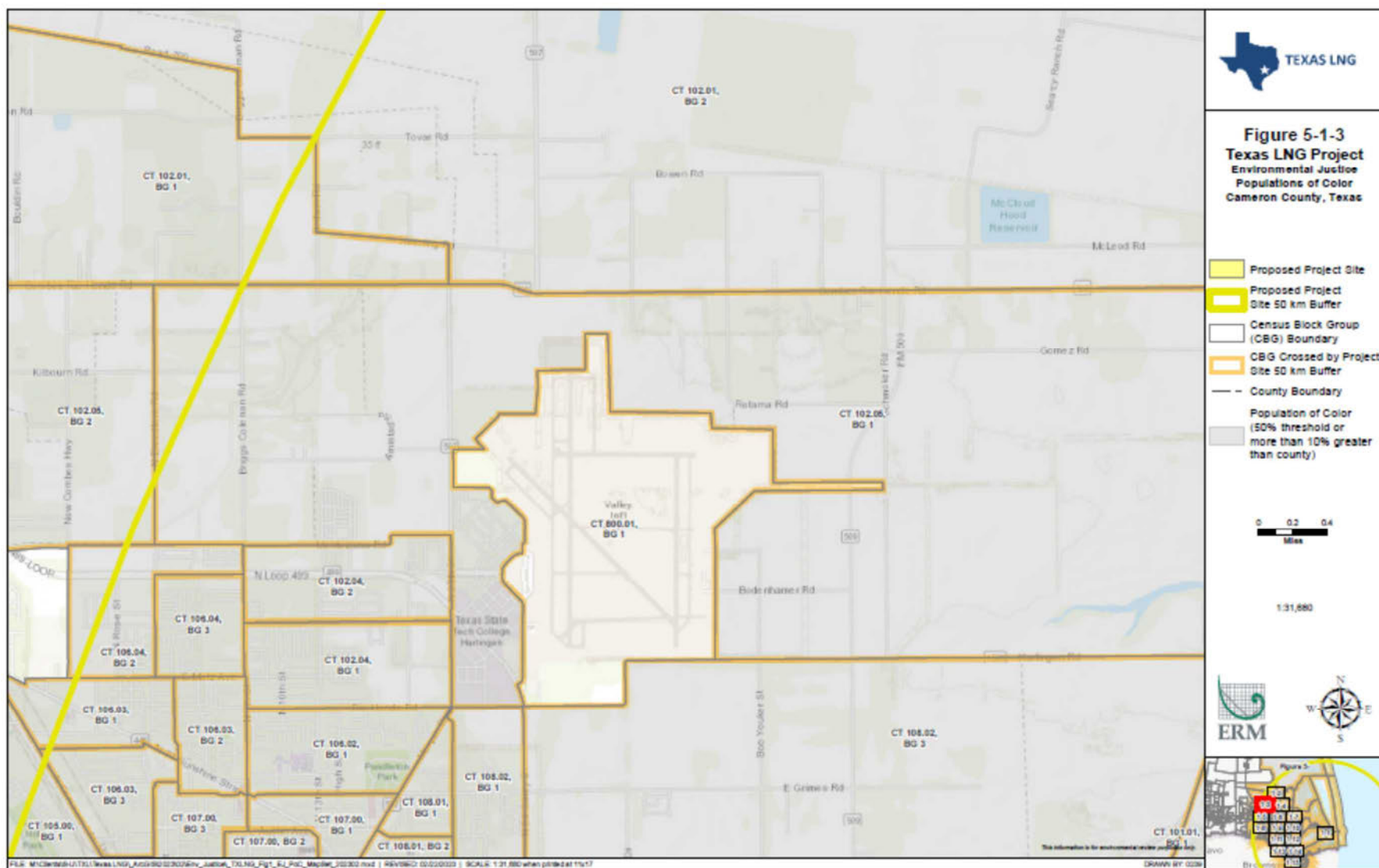
B- 29 -





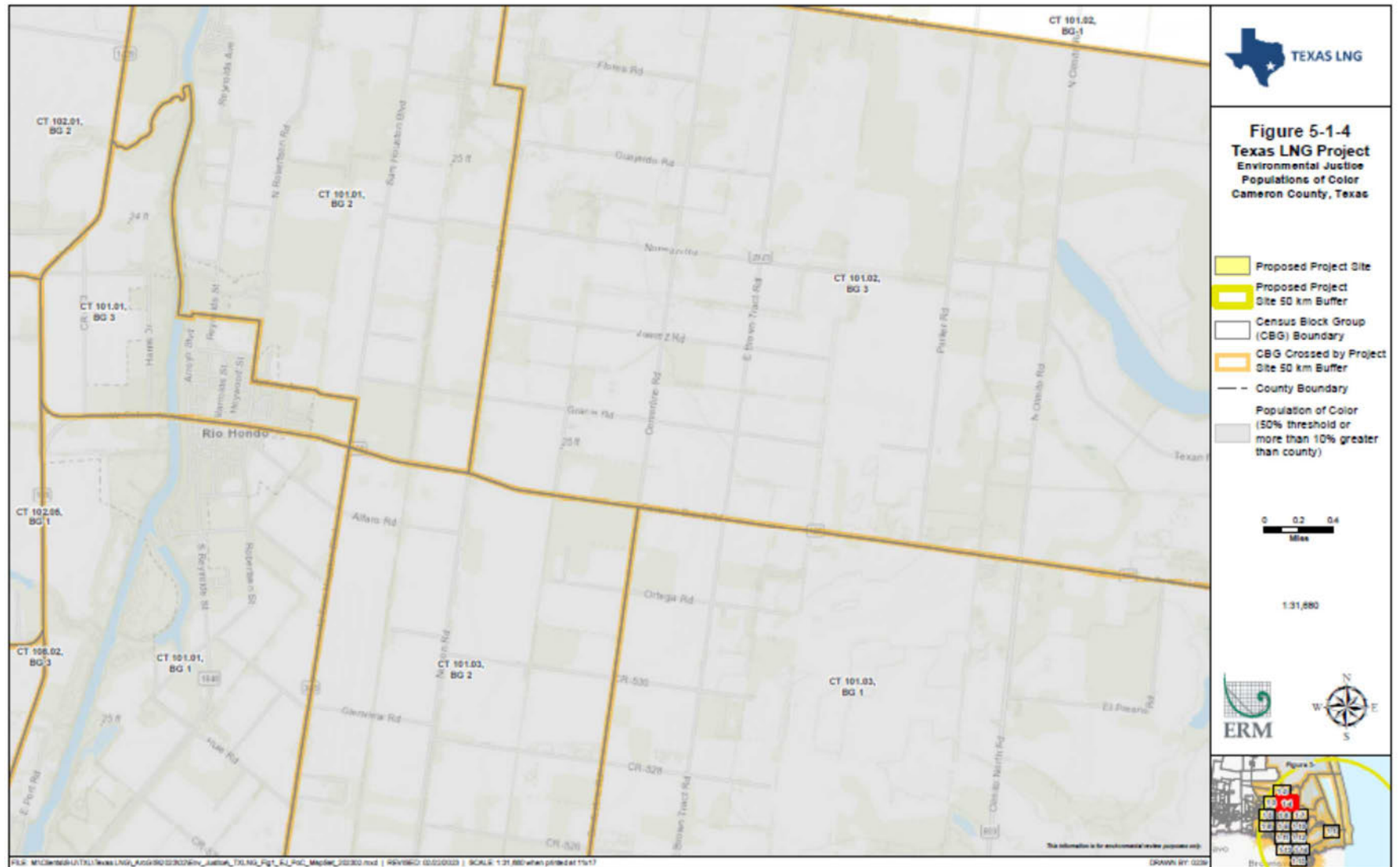
Docket No. CP16-116-002

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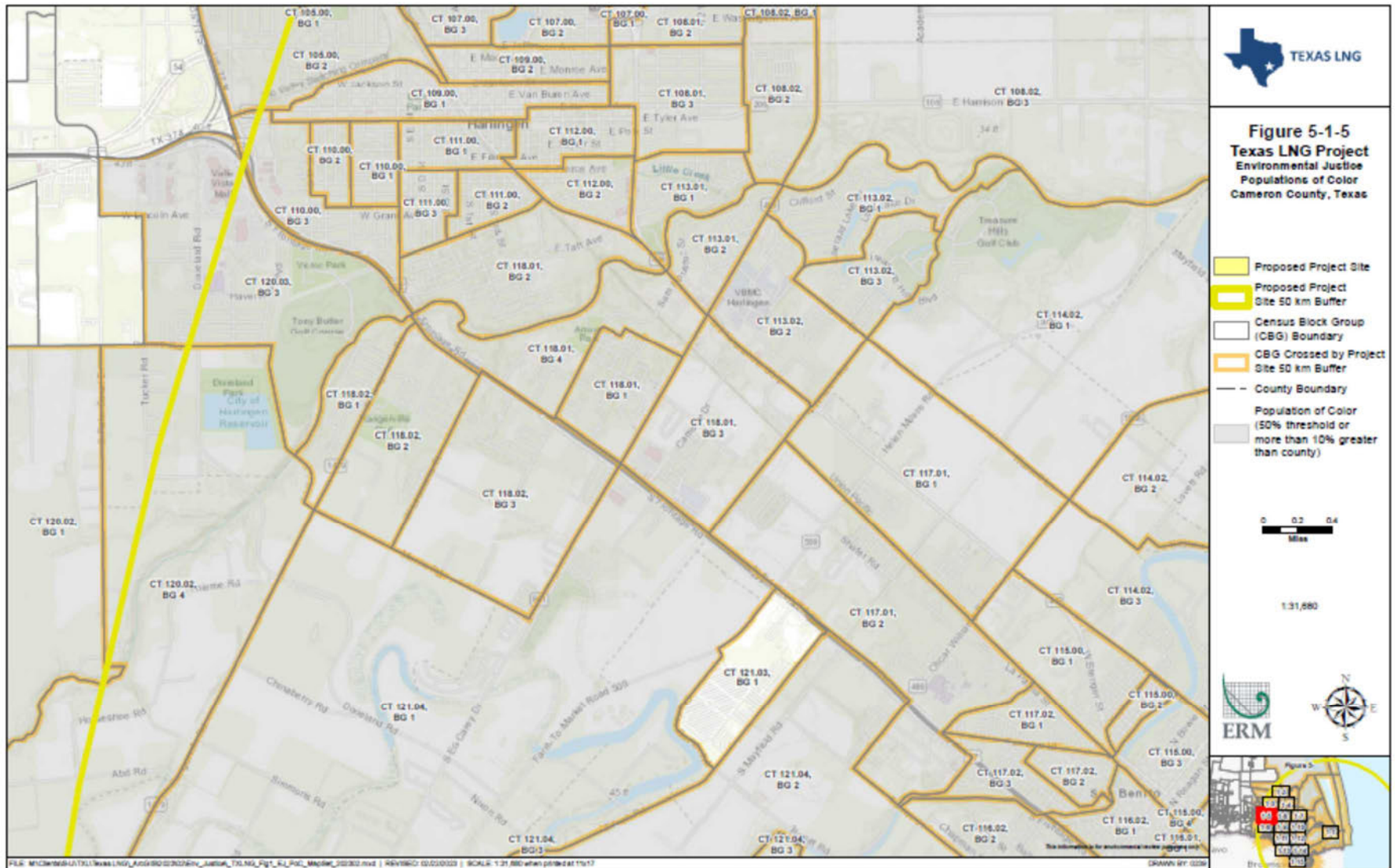
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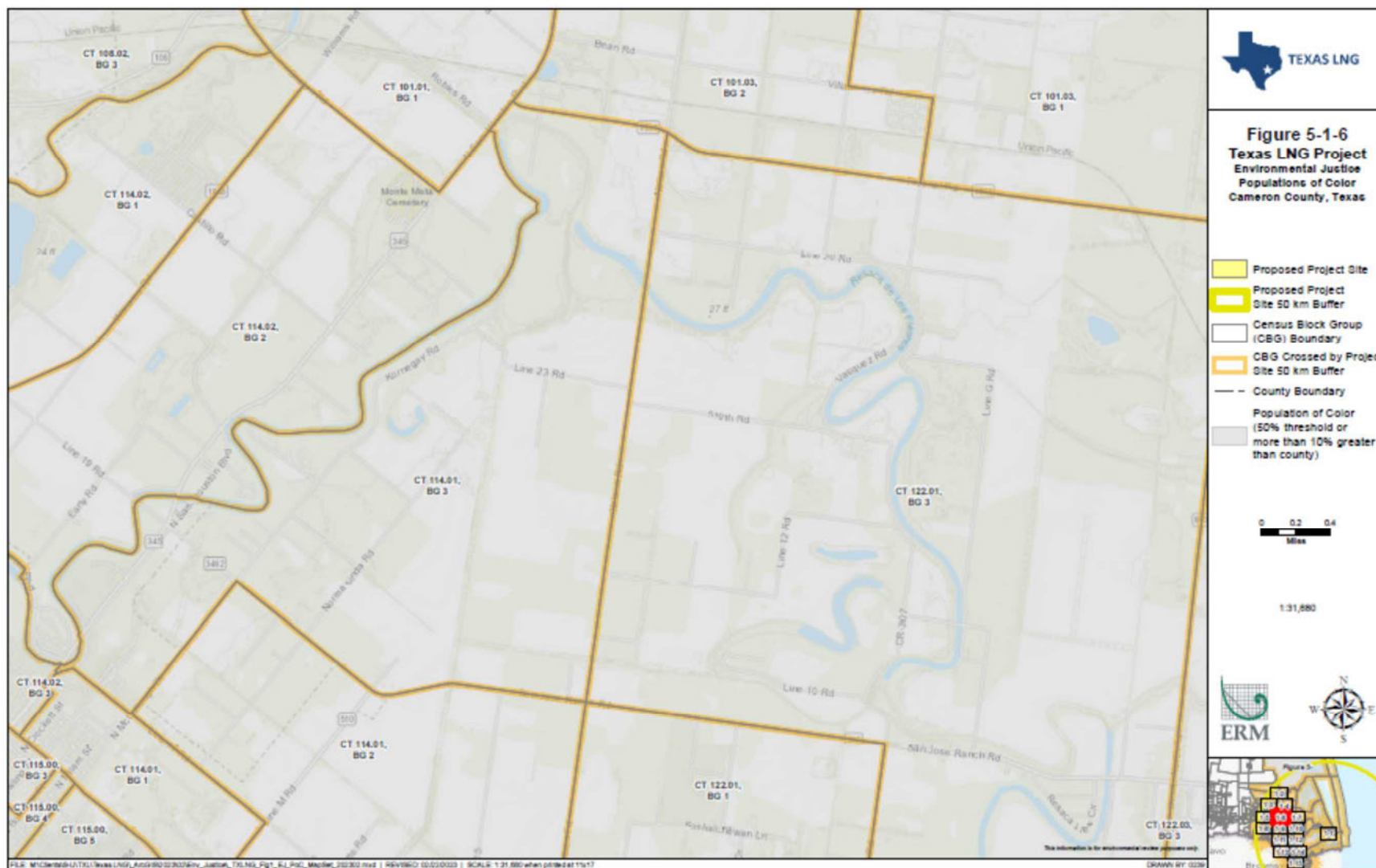
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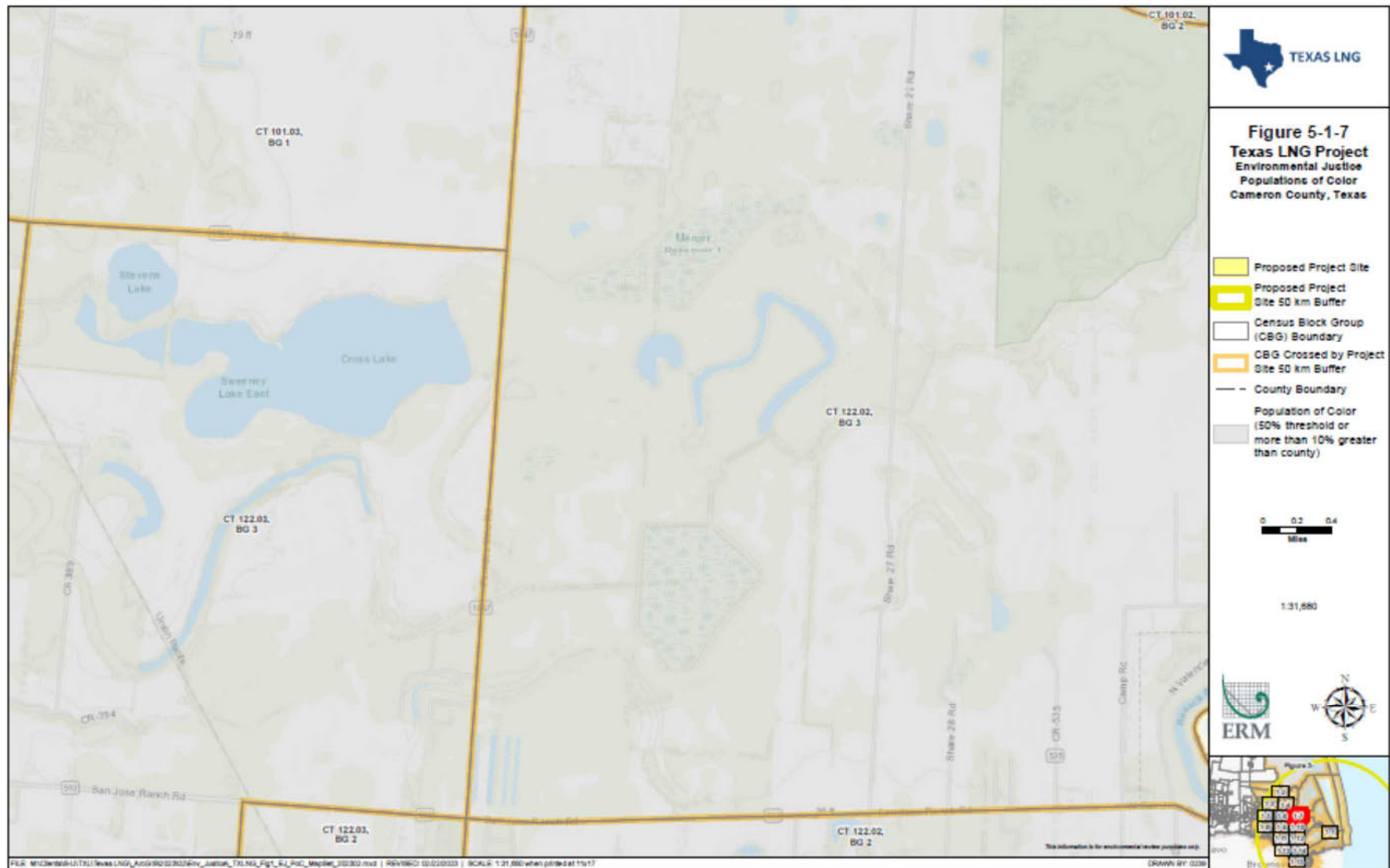
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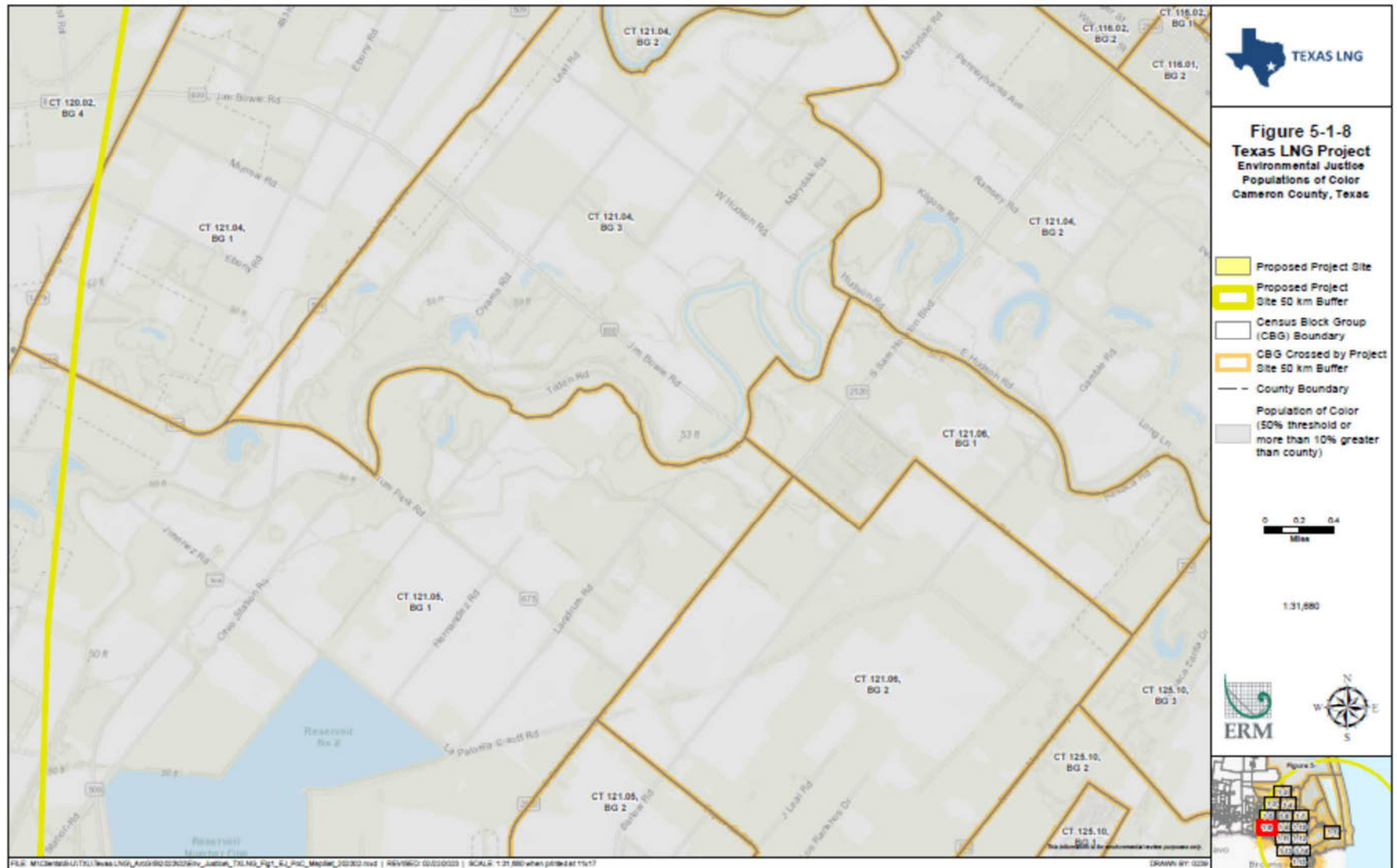
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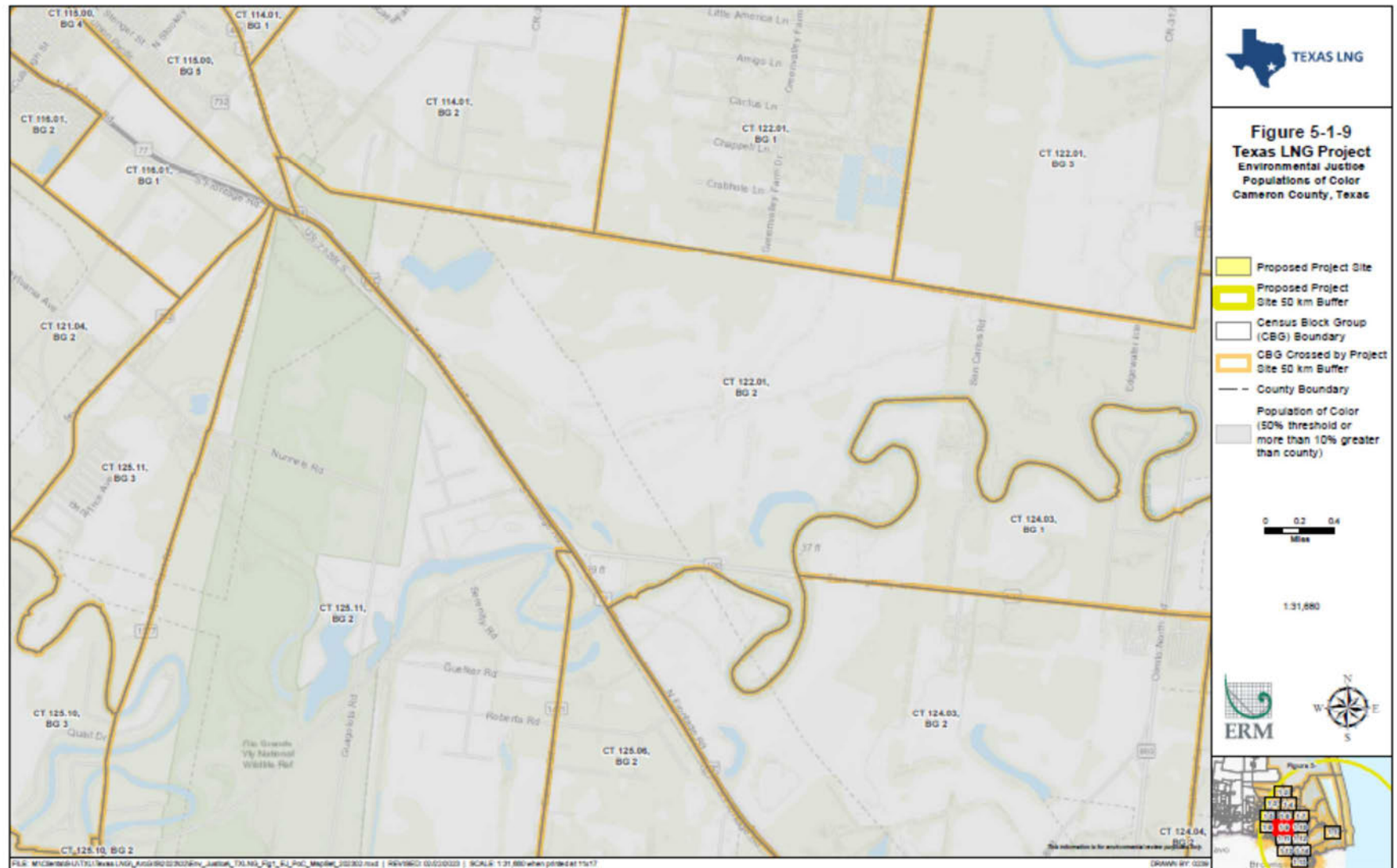
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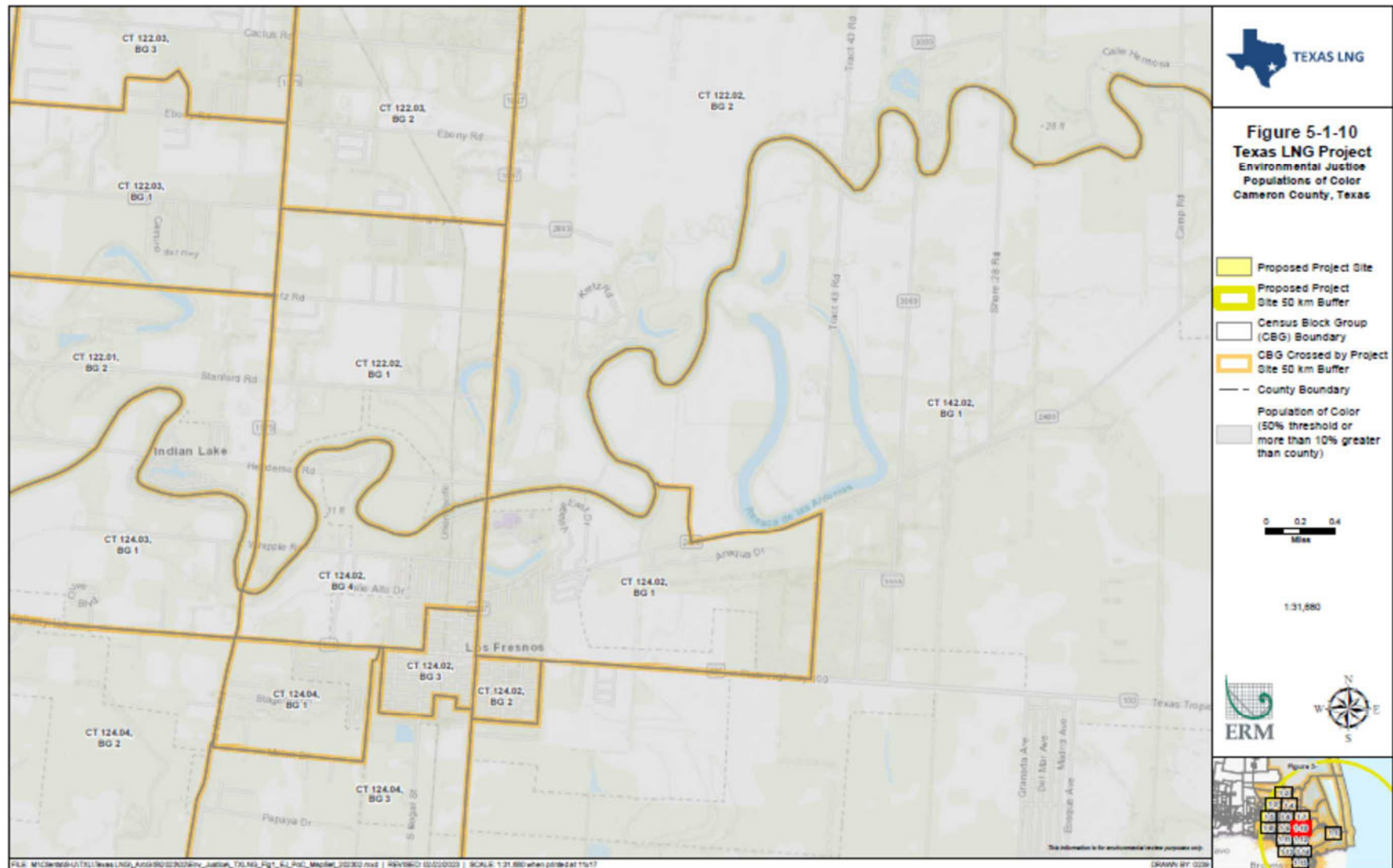
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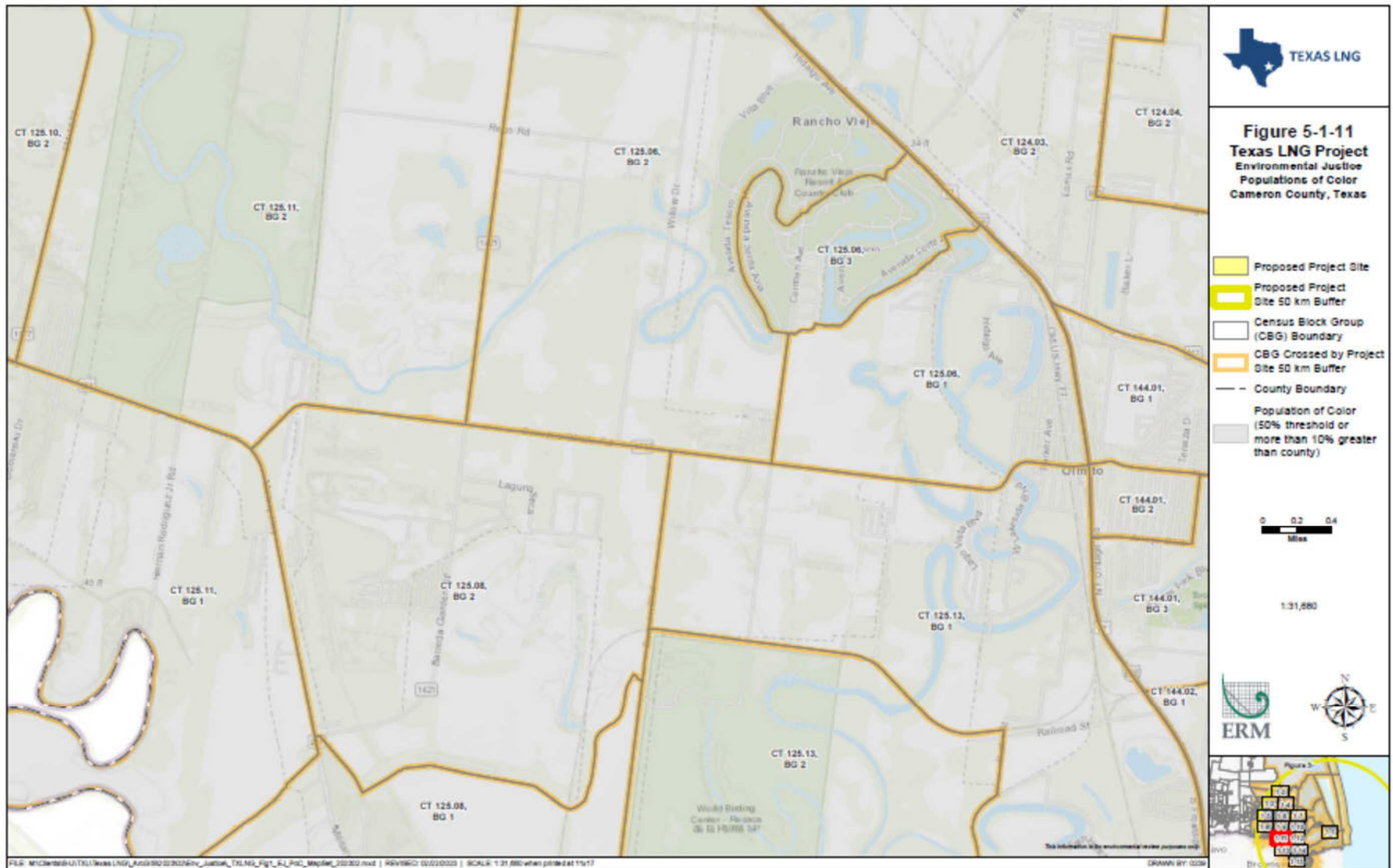
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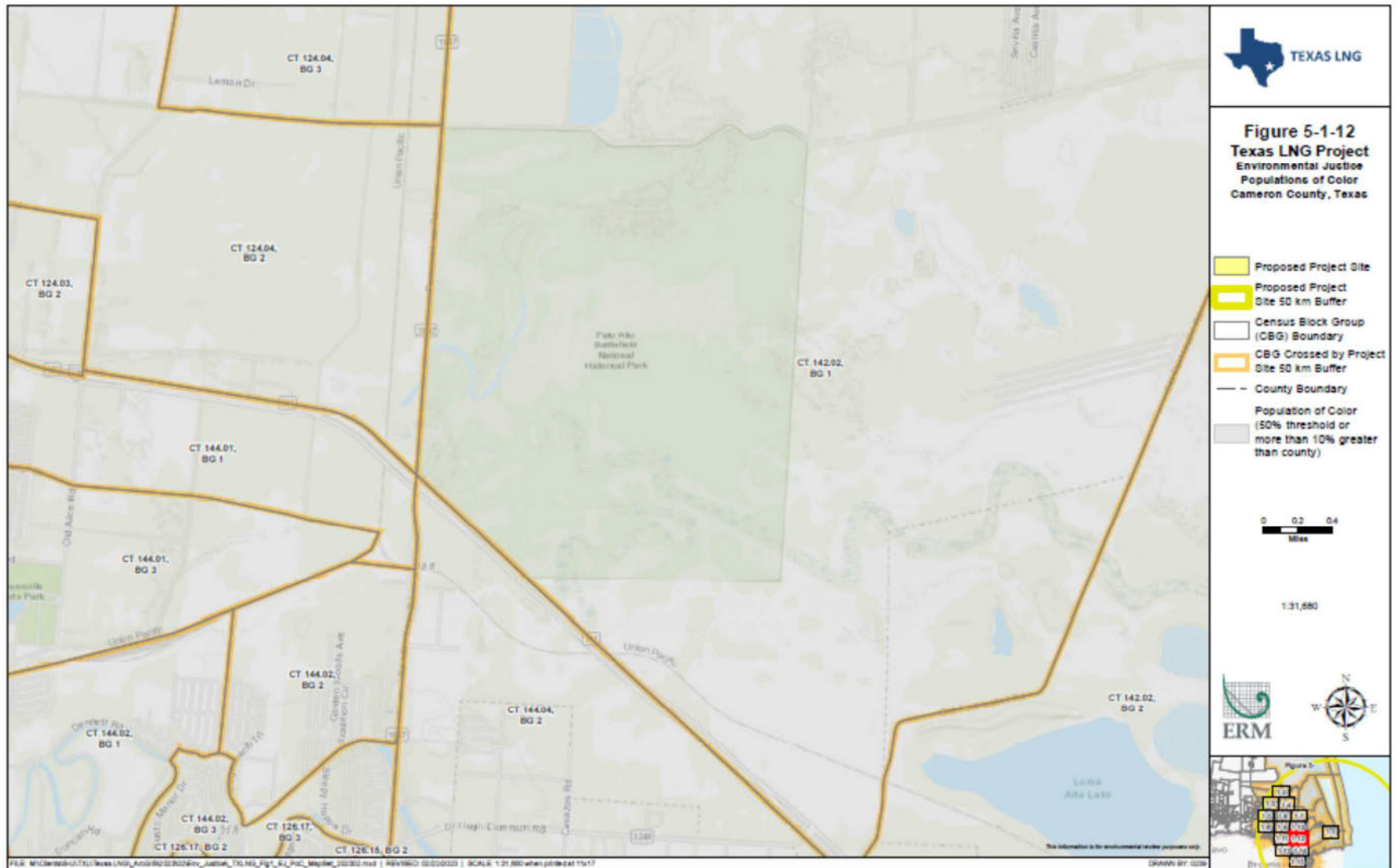
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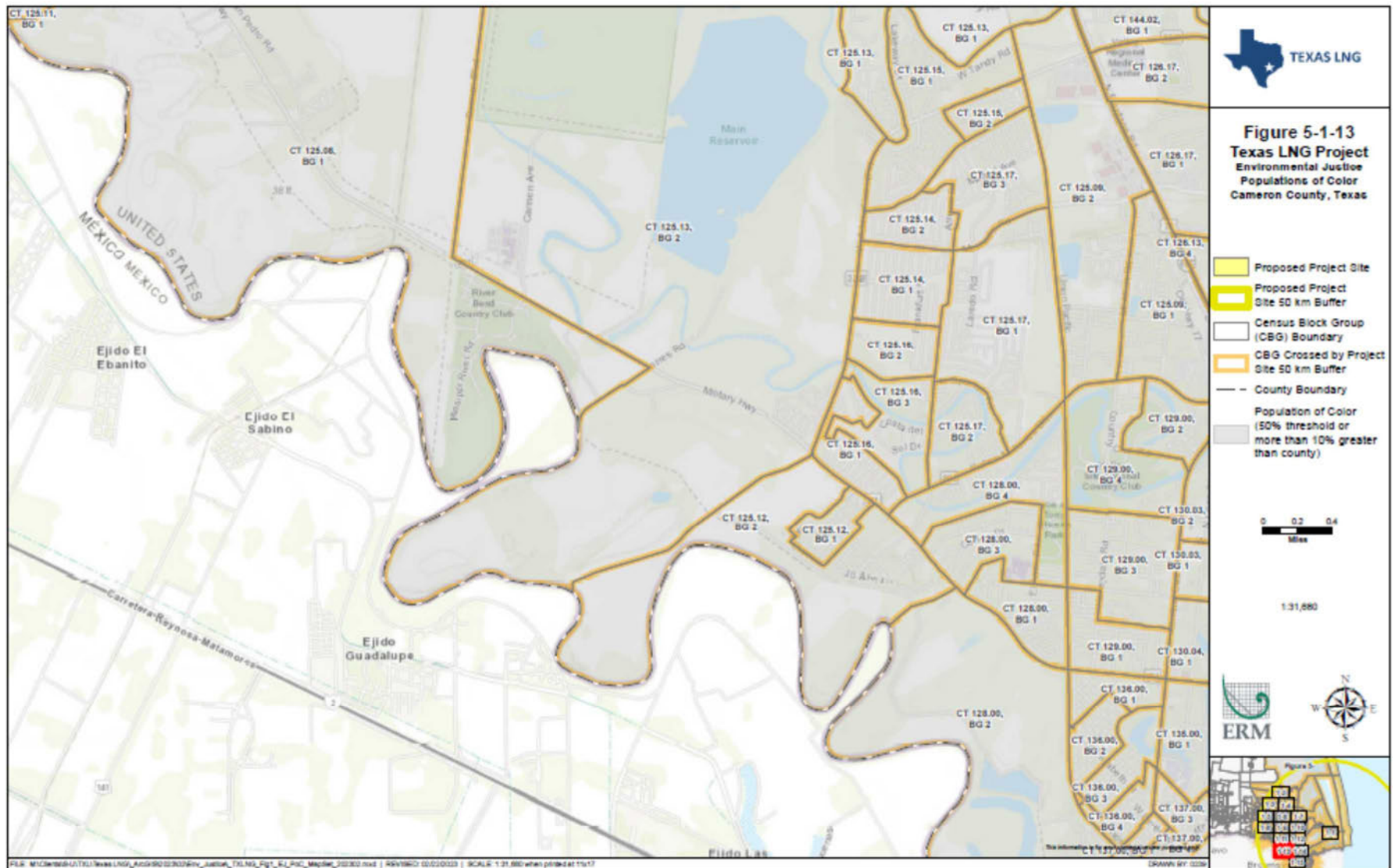
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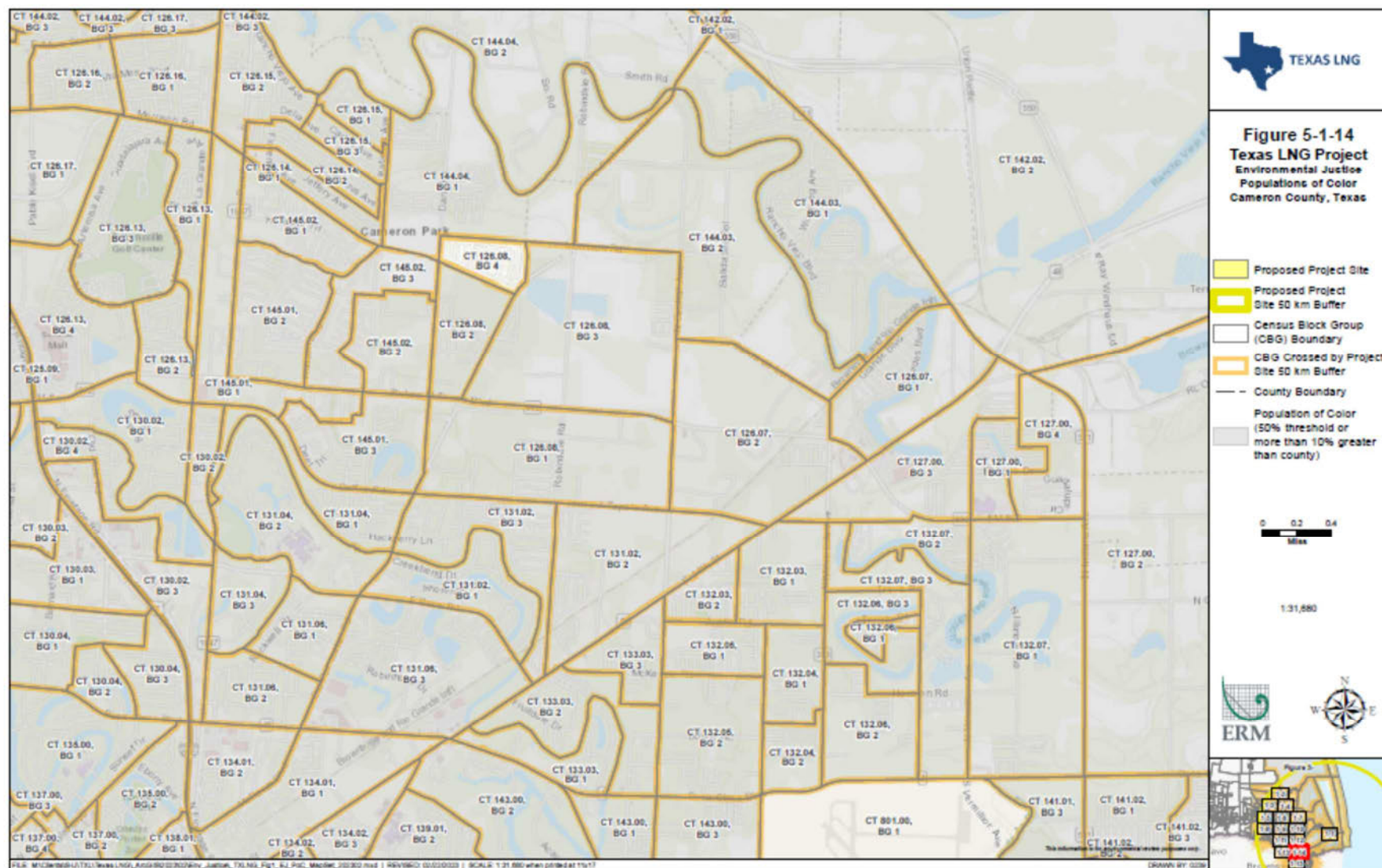
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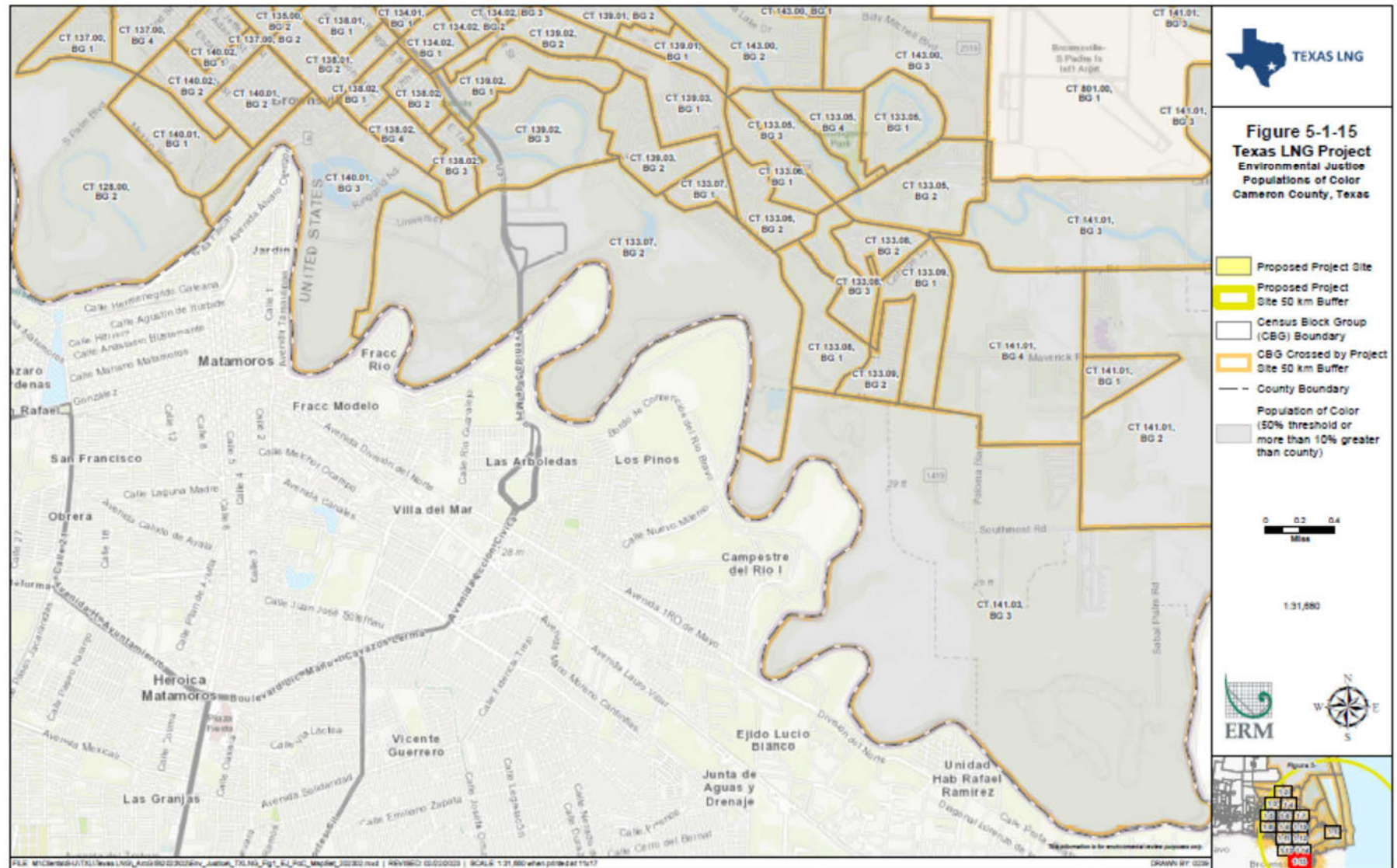
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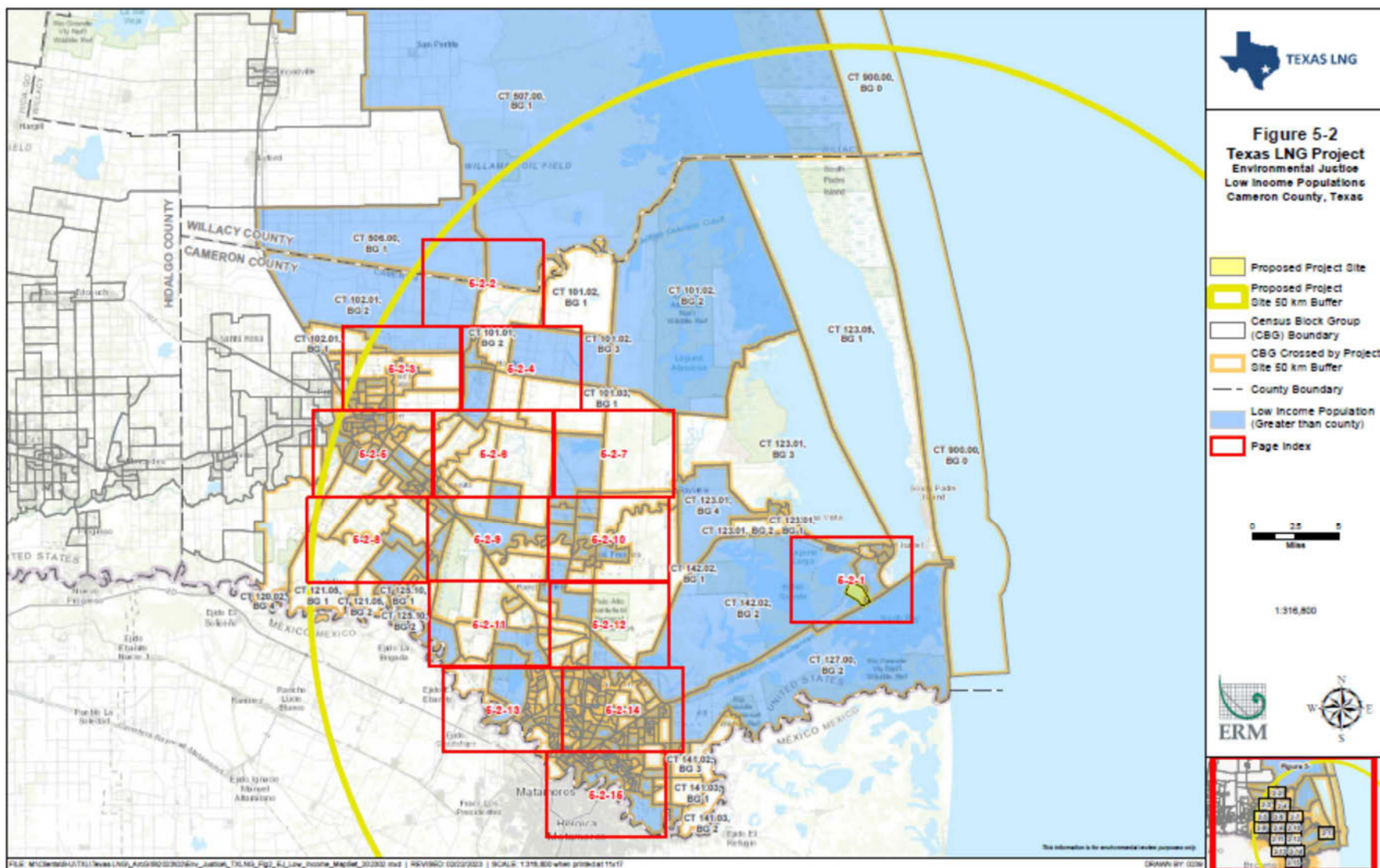
Docket No. CP16-116-002

B- 43 -



Docket No. CP16-116-002







B- 44 -



B- 45 -



Figure 5-2-1
Texas LNG Project
Environmental Justice
Low Income Populations
Cameron County, Texas

-  Proposed Project Site
 Proposed Project Site 50 km Buffer
 Census Block Group (CBG) Boundary
 CBG Crossed by Project Site 50 km Buffer
 County Boundary
 Low Income Population (Greater than county)

1,31,680

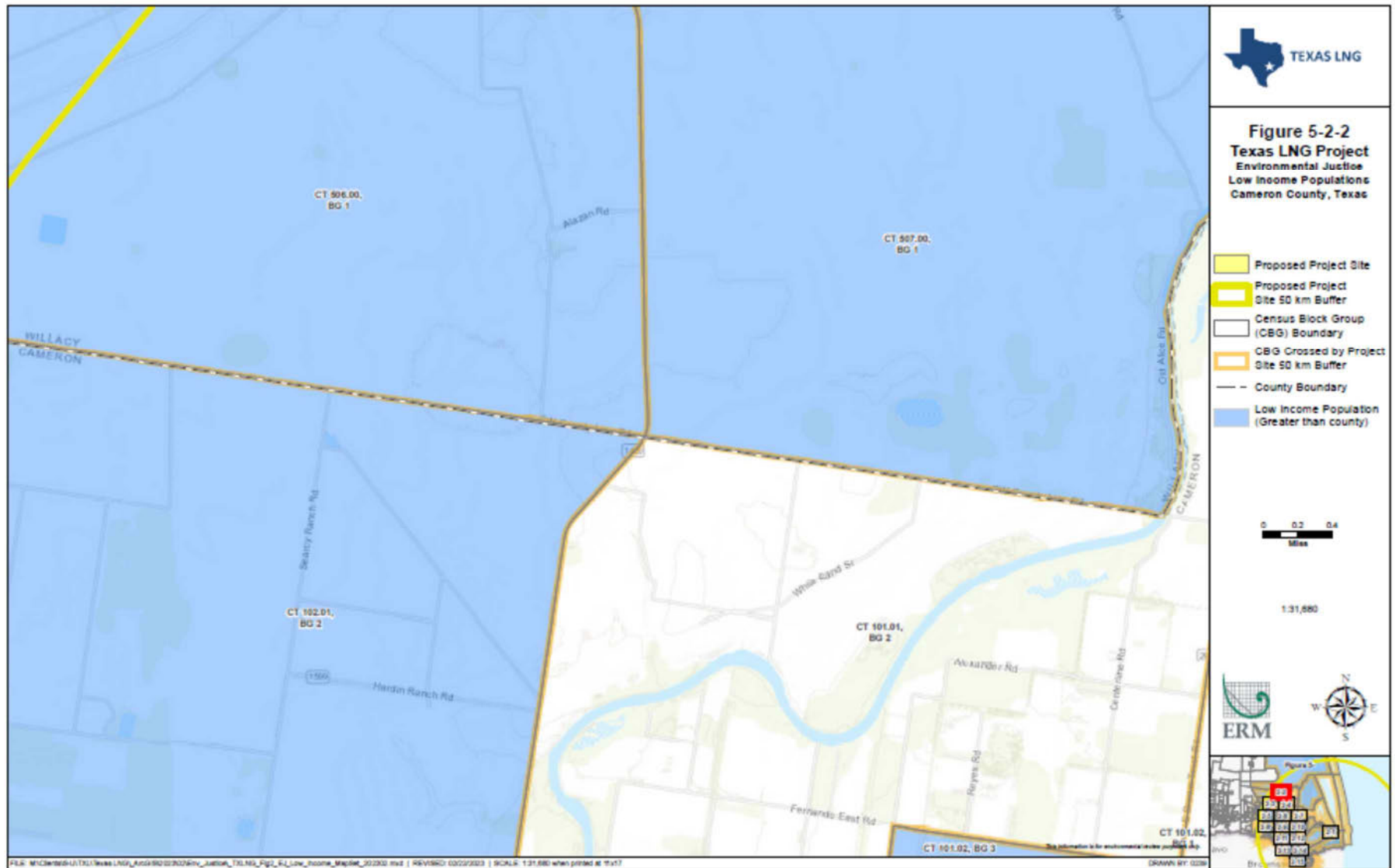


This information is for environmental review purposes only.

Keywords: child sexual abuse; disclosure; social support

Docket No. CP16-116-002







B- 46 -



B- 47 -



Figure 5-2-3
Texas LNG Project
Environmental Justice
Low Income Populations
Cameron County, Texas

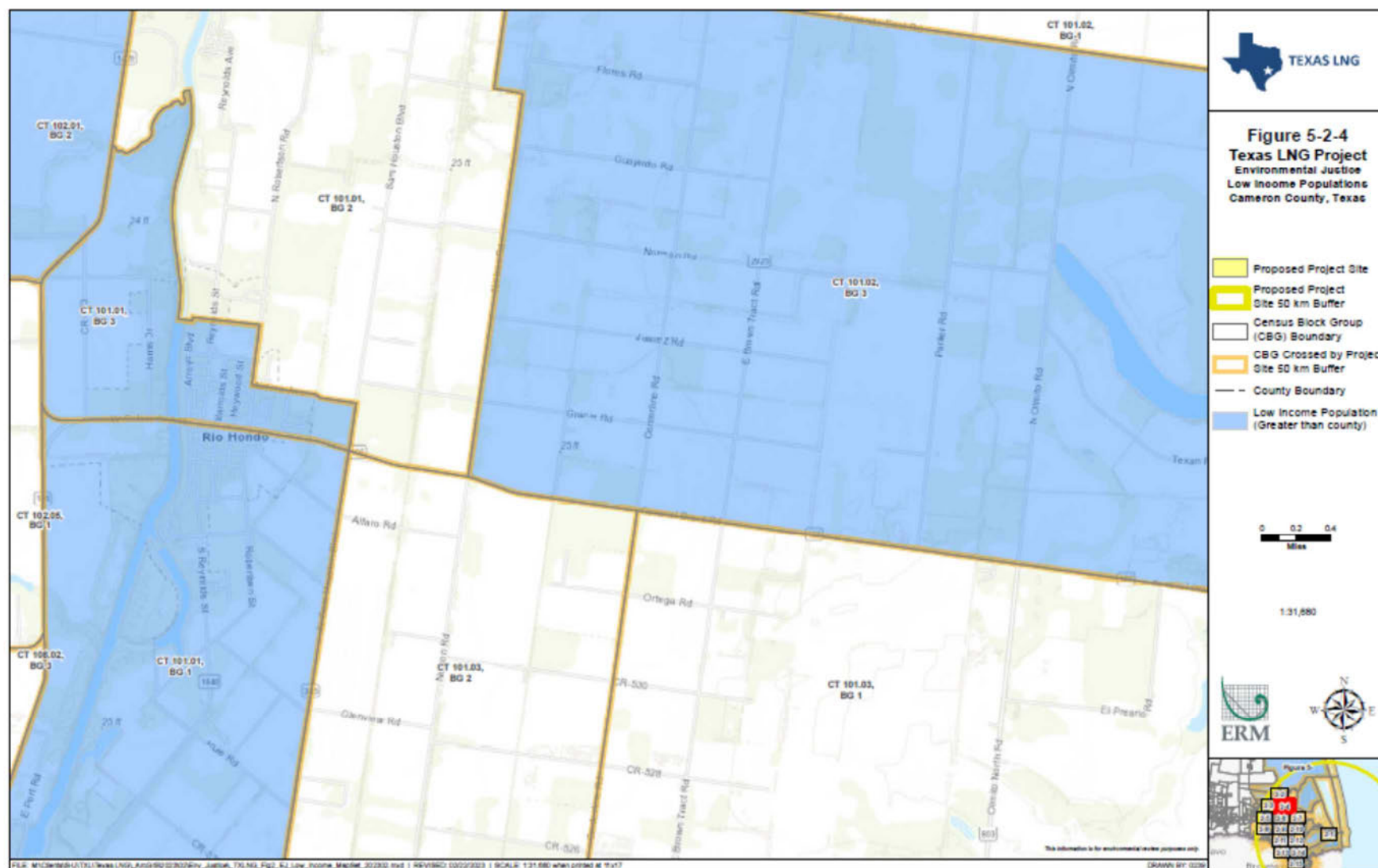
-  Proposed Project Site
 Proposed Project Site 50 km Buffer
 Census Block Group (CBG) Boundary
 CBG Crossed by Project Site 50 km Buffer
 County Boundary
 Low Income Population (Greater than county)

1,31,680



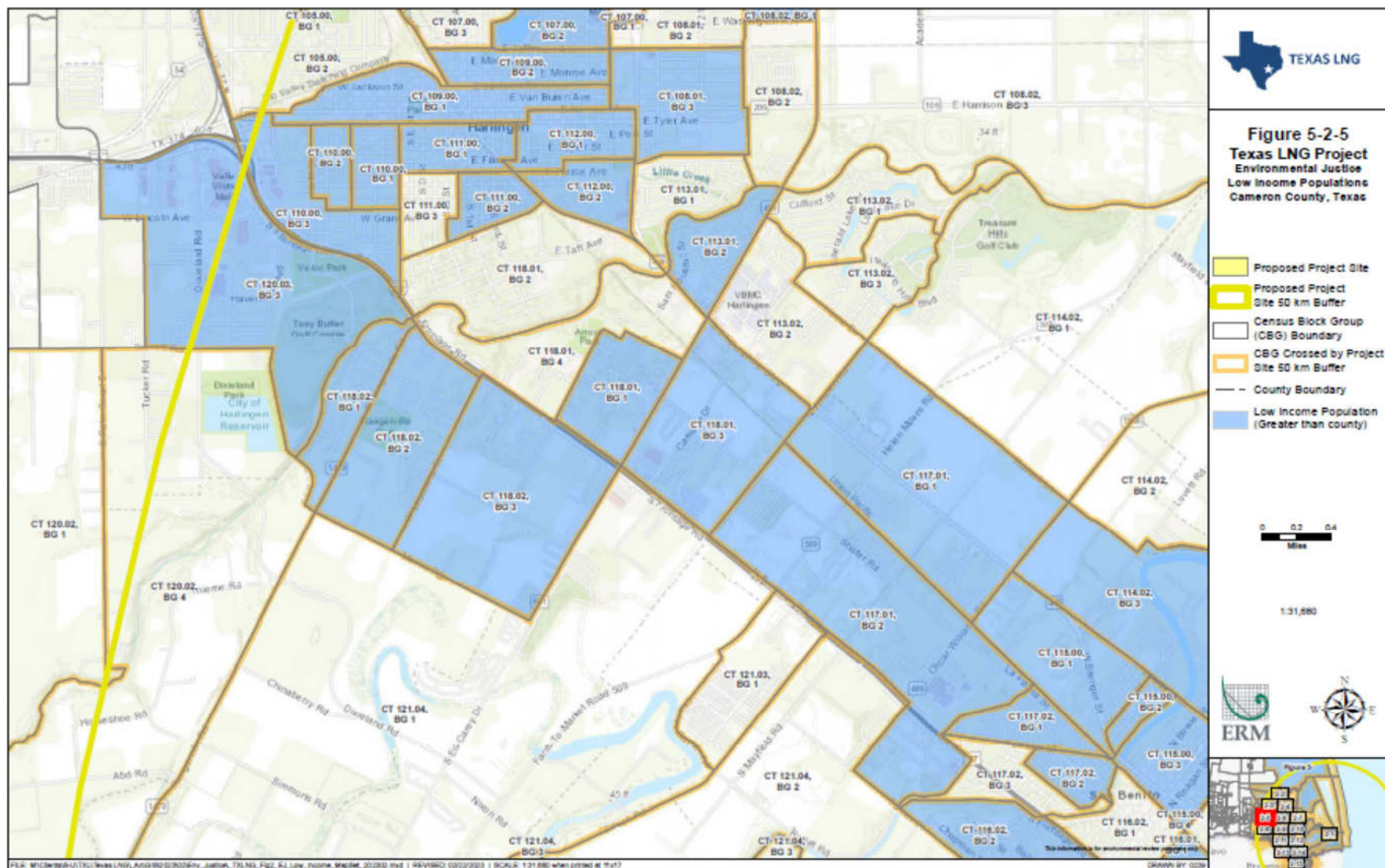
Docket No. CP16-116-002

B- 48 -



Docket No. CP16-116-002

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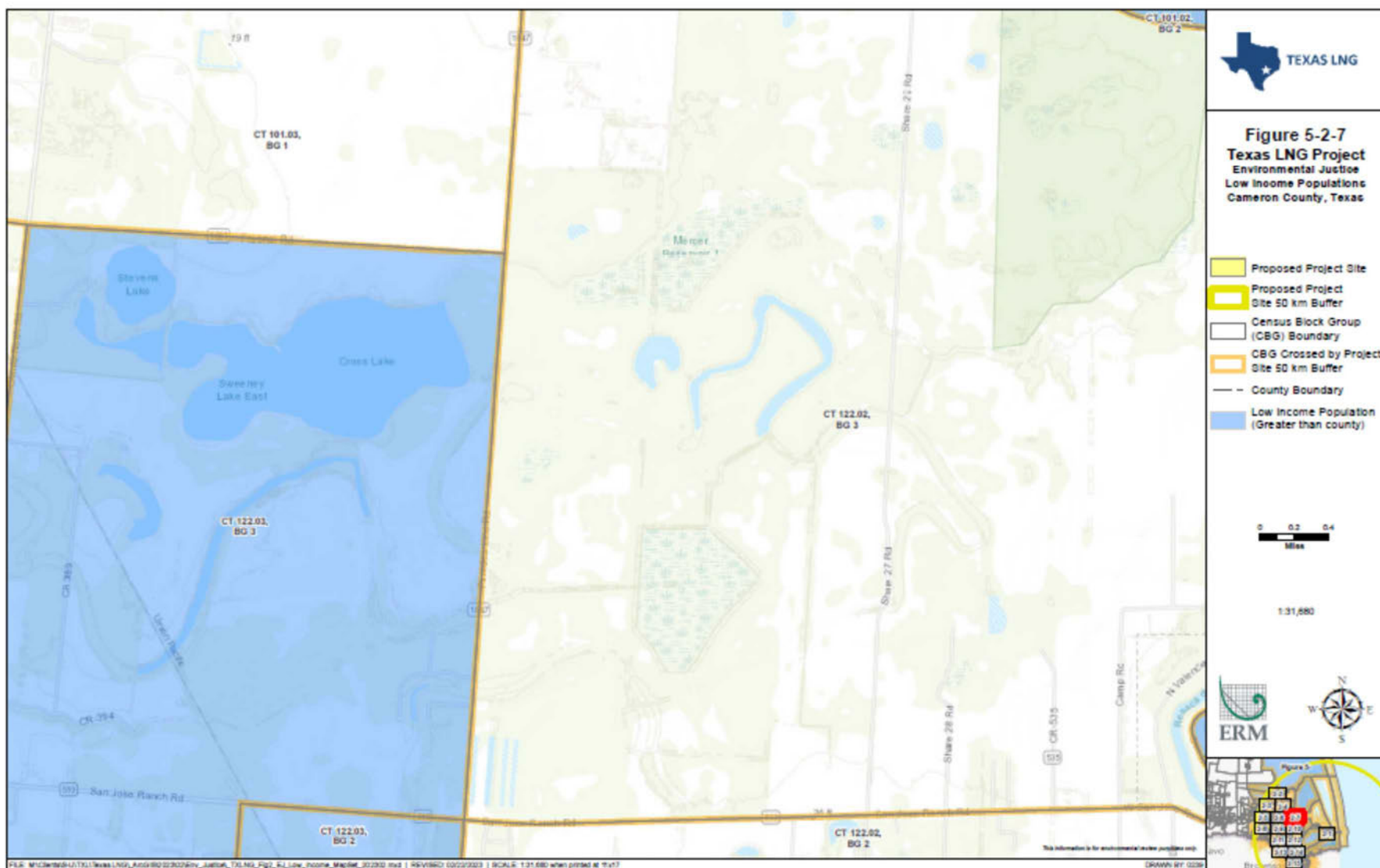


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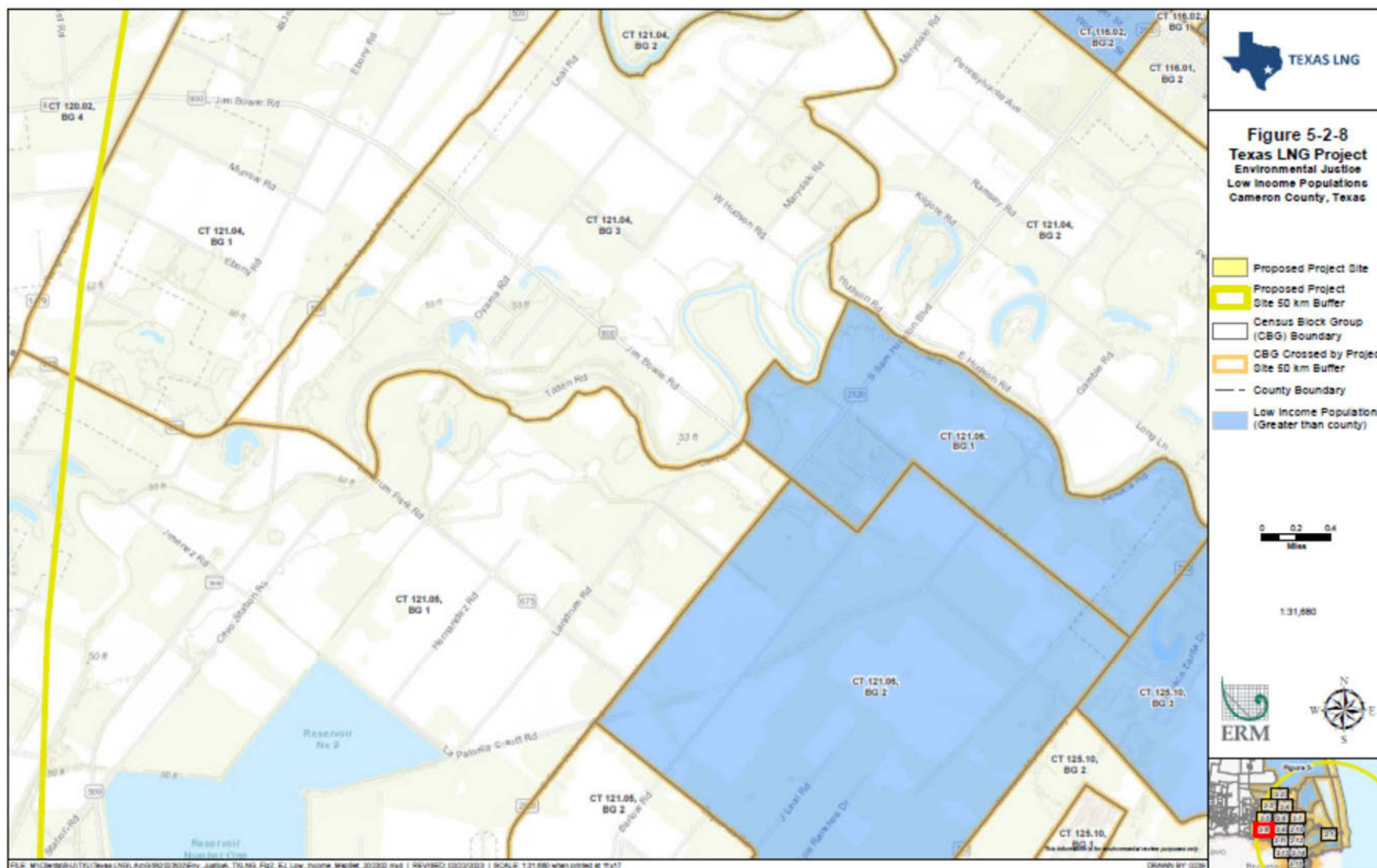
Docket No. CP16-116-002

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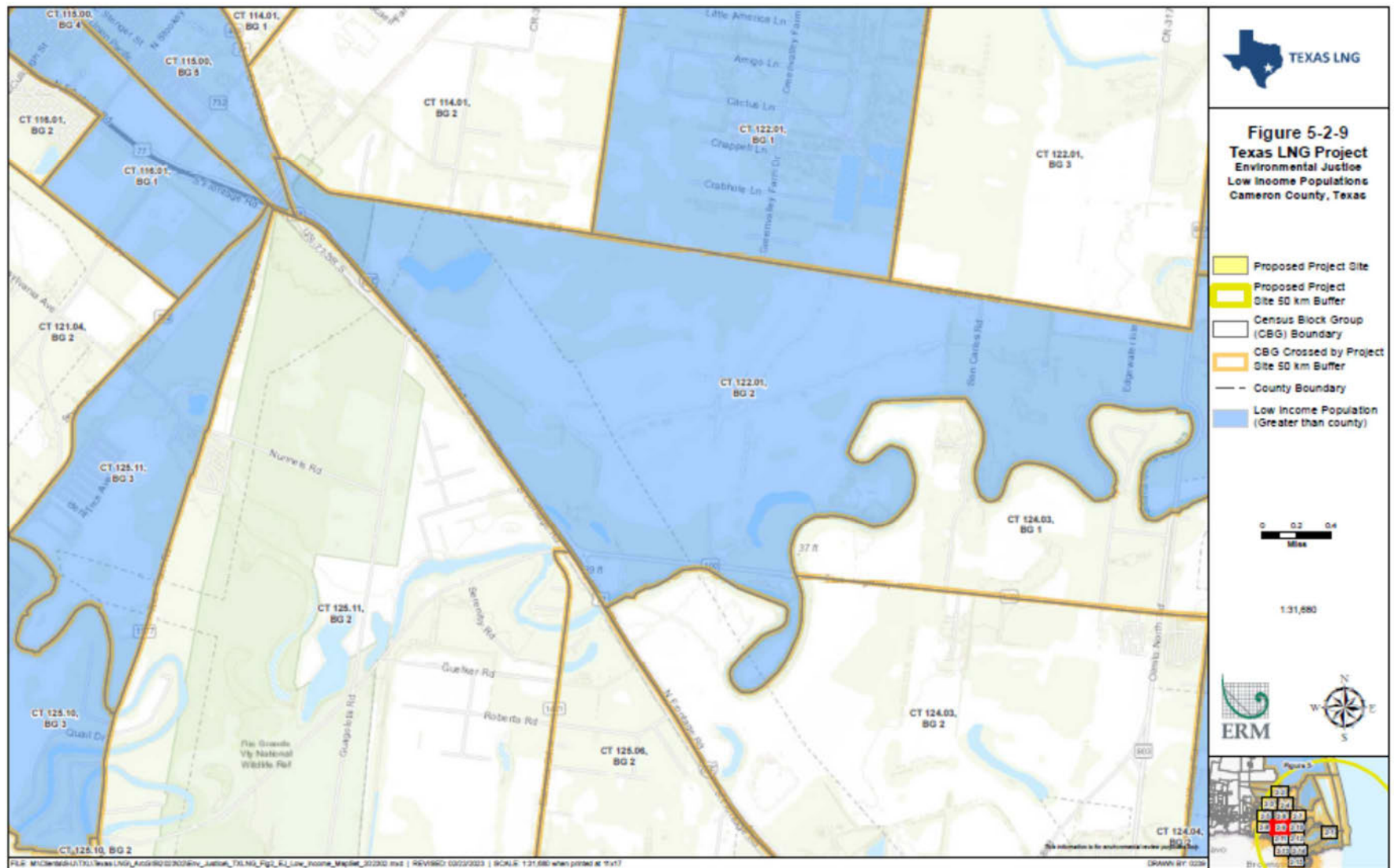
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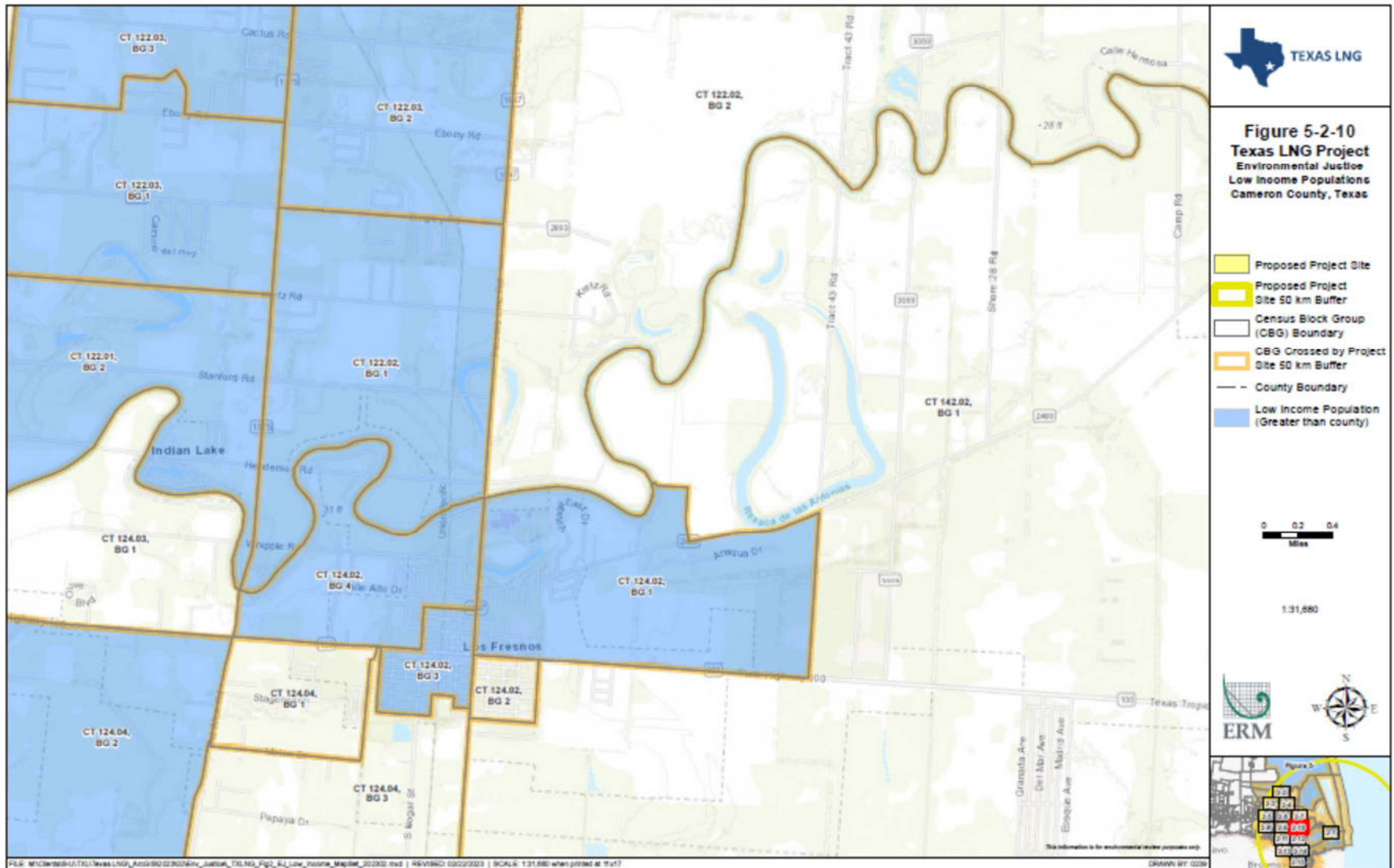
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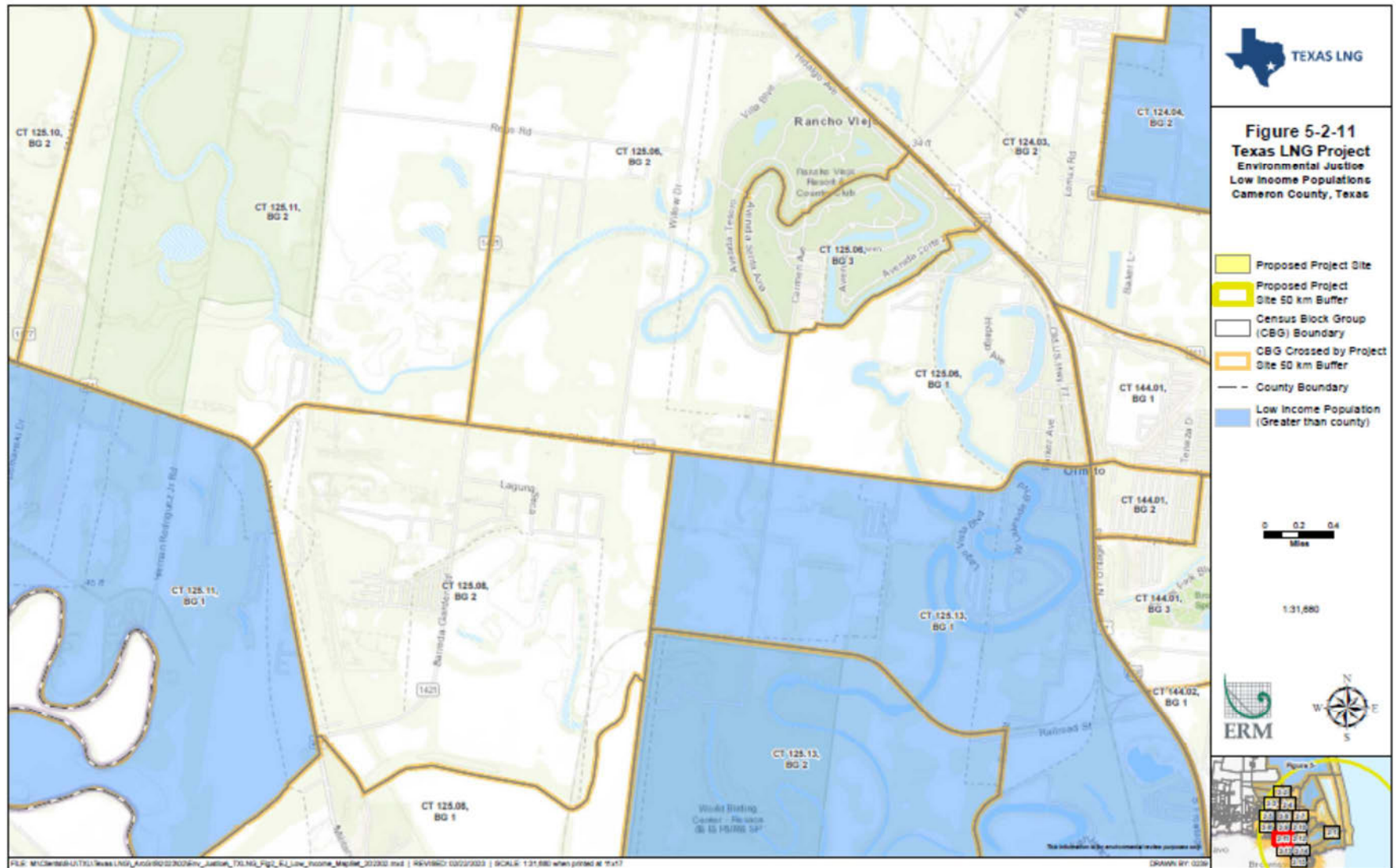
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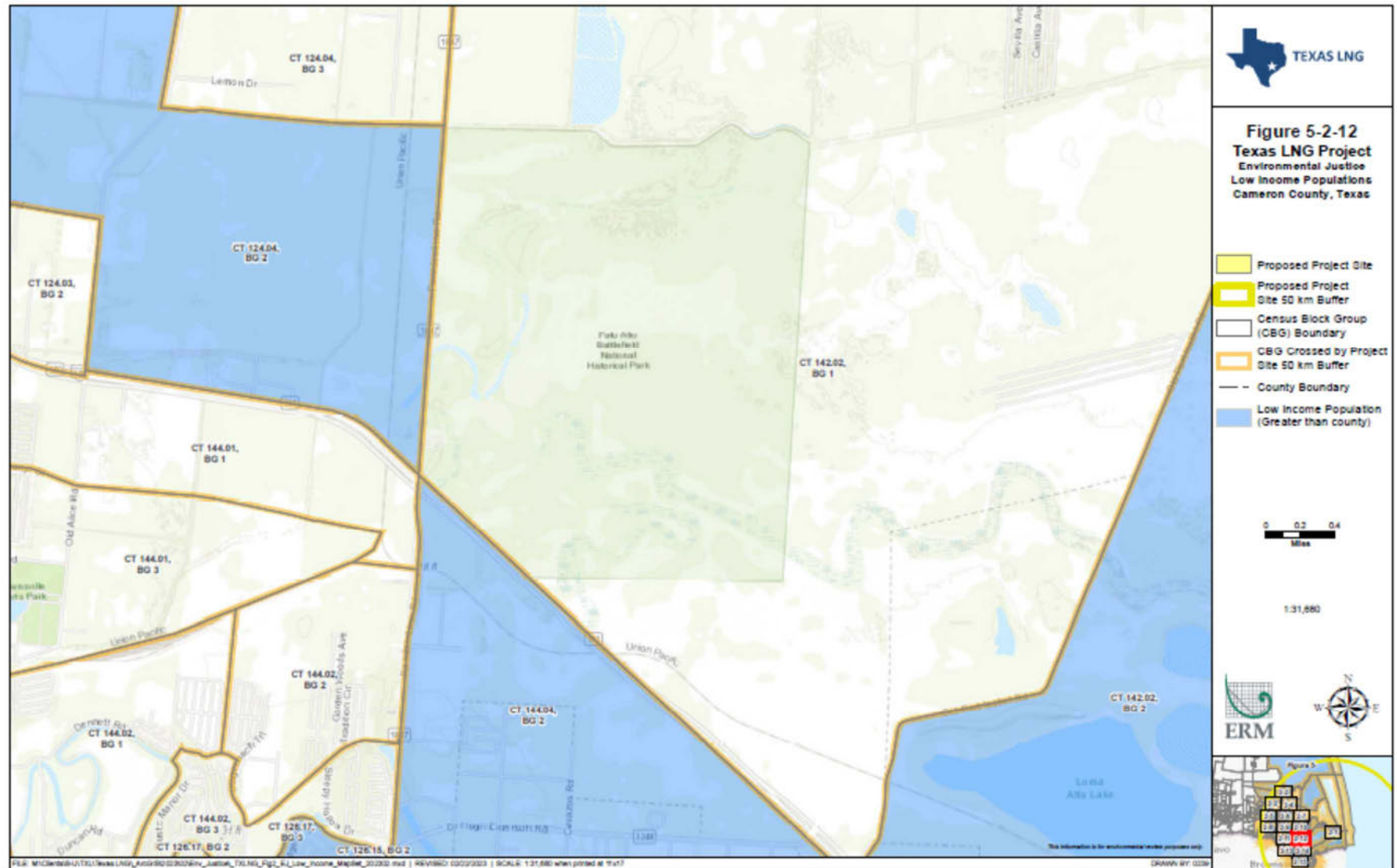
Docket No. CP16-116-002

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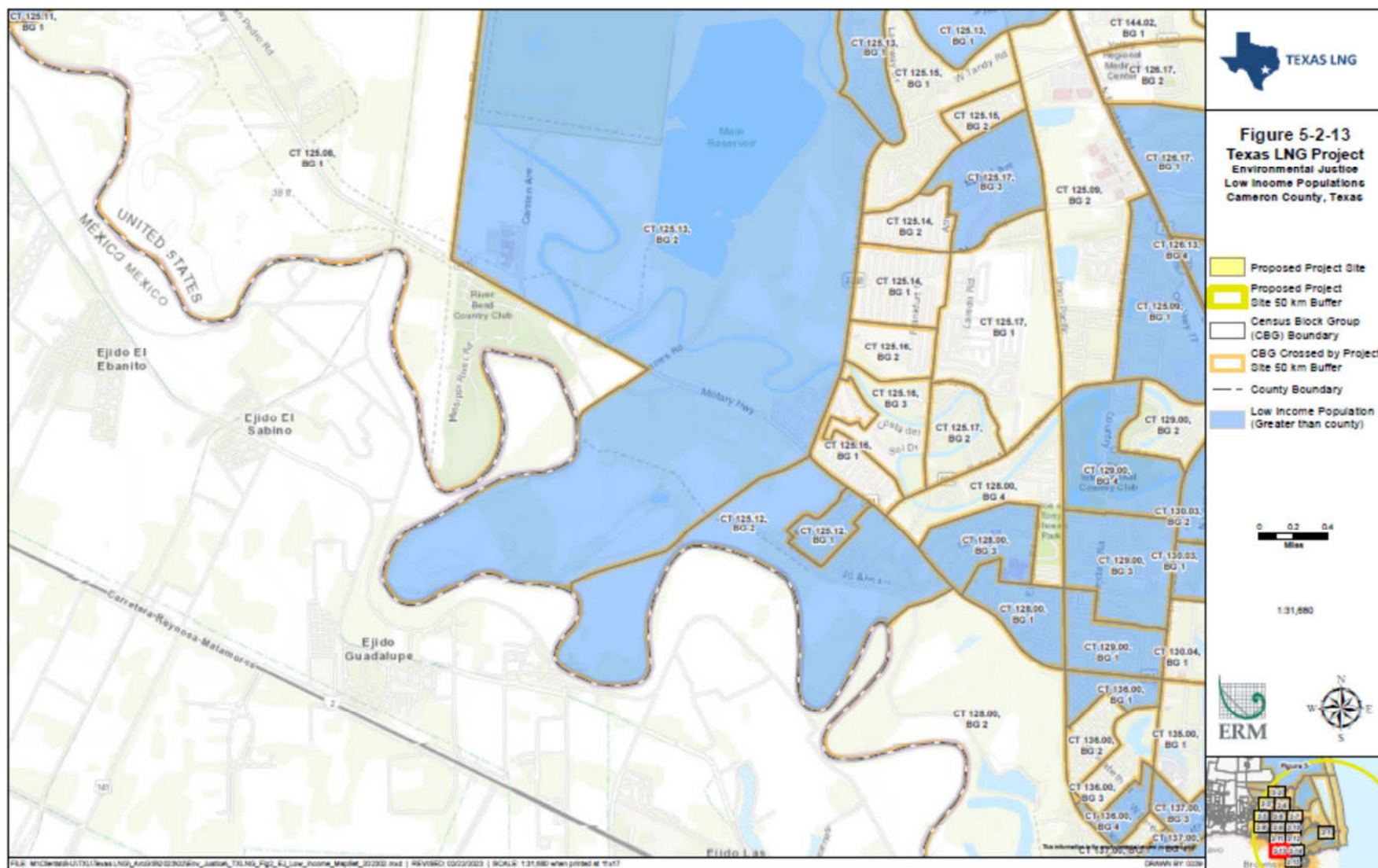


Docket No. CP16-116-002

B- 56 -

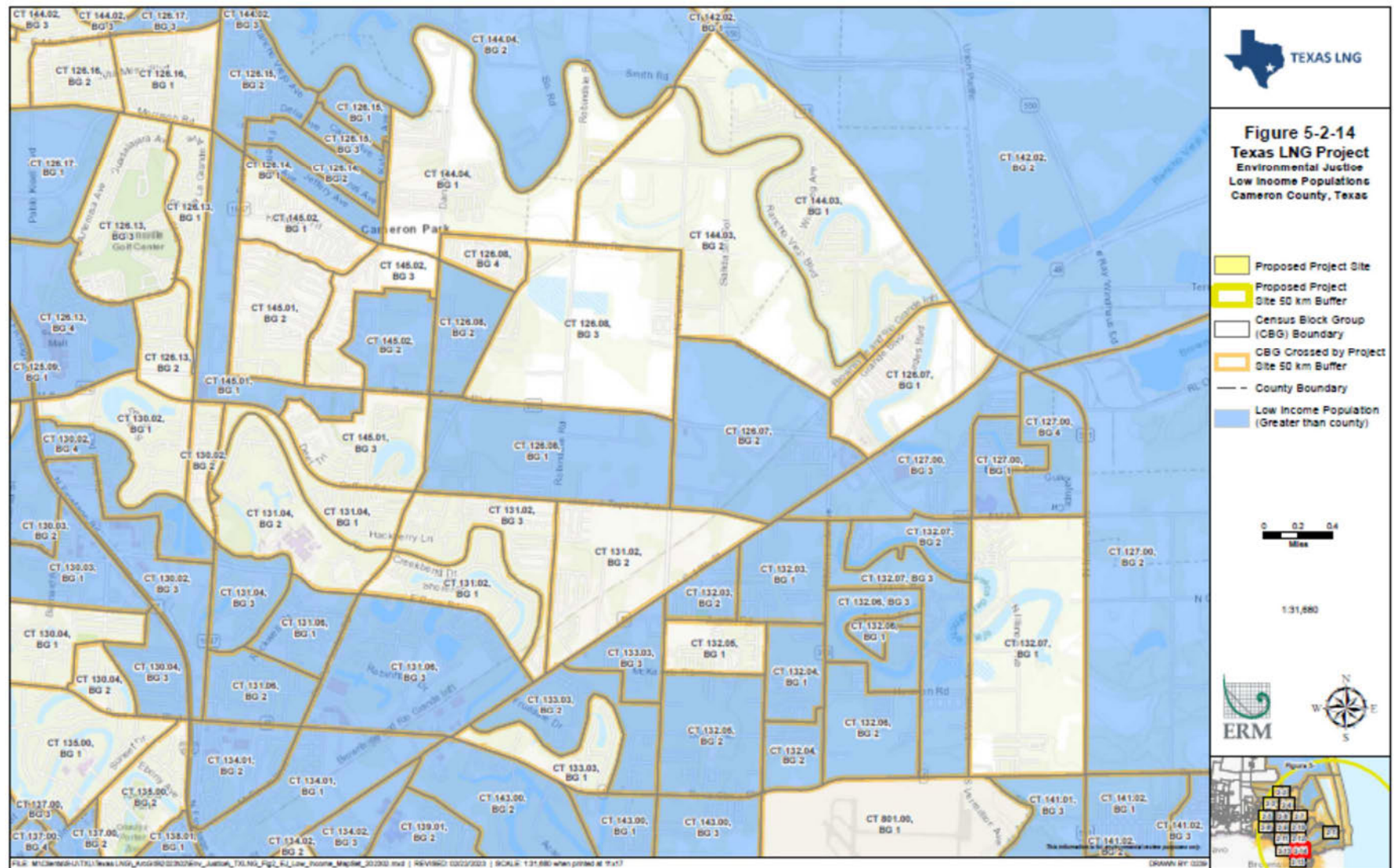


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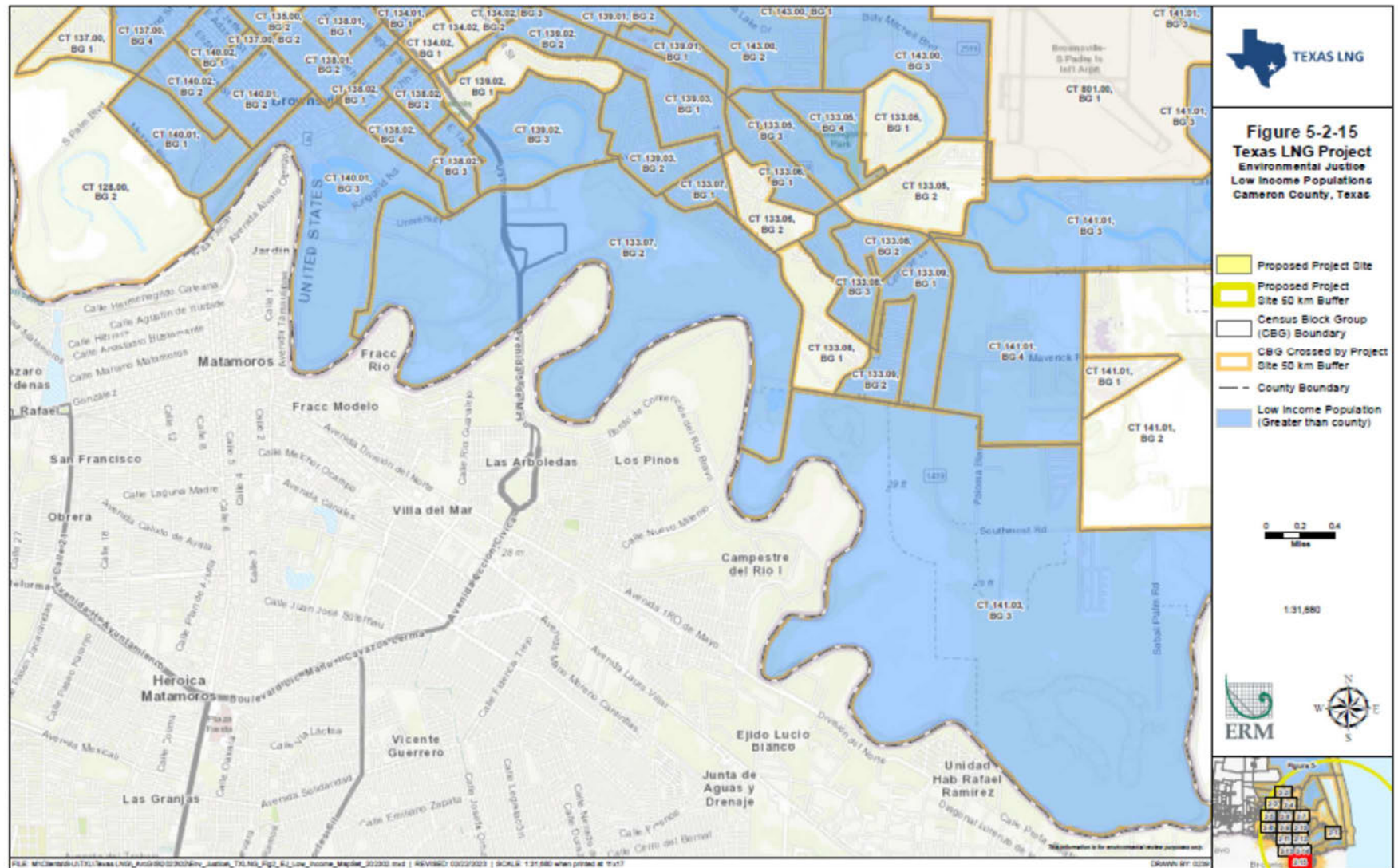
Docket No. CP16-116-002

B- 58 -



Docket No. CP16-116-002

B- 59 -



Appendix C

Commission Staff's Environmental Justice Analysis of Potential Public Safety Impacts and Emergency Response Plans for the Texas LNG Project and LNG Marine Vessels

A. Onsite and Offsite Emergency Response Plans

Texas LNG would continue to develop a comprehensive Emergency Response Plan with local, state, and federal agencies and emergency response officials and would continue these collaborative efforts during the development, design, and construction of the project.¹ As required by Environmental Condition 36, Texas LNG must file an Emergency Response Plan covering the terminal and ship transit for review and approval by Commission staff prior to construction. Commission staff would also review and approve final design information related to the various layers of protection that would enhance the safety and security of the Texas LNG Project and would be in accordance with recommended and generally accepted good engineering practices.² These reviews go above the minimum federal requirements required by the Pipeline and Hazardous Materials Safety Administration (PHMSA) and U.S. Coast Guard (USCG) regulations under for the liquefied natural gas (LNG) facility,³ and USCG regulations for LNG marine vessels.⁴ In addition, for LNG marine vessels, the 2004 Sandia Report describes the risk and consequences within each Zone of Concern with risk management strategies to mitigate risk to infrastructure and the public.⁵ The layers of protection and risk management strategies reduce public incident impacts to less than significant levels, including impacts to those with access and functional needs and environmental justice communities.

The Emergency Response Plan and Cost Sharing Plan requirements are required by Environmental Conditions 36 and 37, as modified in Appendix A of this order.

¹ Texas LNG Sept. 15, 2022 Response to Commission staff Data Request at 24-26.

² Final EIS, *Preliminary Engineering Design Review* section, 4-219 to 4-244.

³ 49 C.F.R. § 193 (2022) (PHMSA Regulations); 33 C.F.R. §§ 105, 127 (2022) (USCG Regulations).

⁴ 33 C.F.R. § 104; 46 C.F.R. § 154.

⁵ Sandia National Laboratories, *Guidance on risk analysis and safety implications of a large liquefied natural gas (LNG) spill over water*, sections 1.3.1, 1.3.2, <https://www.osti.gov/servlets/purl/882343/>.

However, in order to mitigate the potential offsite risks from a catastrophic incident from an LNG marine vessel or at the LNG terminal to people with access and functional needs, Texas LNG would need to consider additional identified elements of recommended and generally accepted good engineering practices for emergency response plans and resource requirements, including, but not limited to consistency with the following National Fire Protection Association (NFPA) codes and standards: NFPA 1600,⁶ NFPA 1616,⁷ NFPA 1620,⁸ NFPA 470,⁹ and NFPA 475¹⁰ or approved equivalents. Specifically, NFPA 1600 (2019 edition) provides provisions for the planning and design process of an emergency management program and includes the following provisions:

- Section 5.2.2 specifies a risk assessment to be conducted evaluating the likelihood and severity of hazards, including accidental and intentional events that may result in hazardous material releases, explosions, and fires as well as consideration of specific causes and preceding events, such as geological events (e.g., subsidence, earthquakes, tsunamis, volcanic, etc.) and meteorological events (e.g., extreme temperatures, hurricanes, tornadoes, floods, snow and ice storms, and wildland fires, etc.).¹¹
- Section 5.2.2.2 specifies the vulnerability of people, property, operations, environment, and supply chain operations to be evaluated.

⁶ The NFPA standards are free and publicly accessible to view in English and Spanish on the NFPA website. NFPA 1600, Standard on Continuity, Emergency, and Crisis Management, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1600>.

⁷ NFPA 1616, Standard on Mass Evacuation, Sheltering, and Re-entry Programs, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1616>.

⁸ NFPA 1620, Standard for Pre-Incident Planning, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1620>.

⁹ NFPA 470, Hazardous Materials/Weapons of Mass Destruction (WMD) Standard for Responders, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=470>.

¹⁰ NFPA 475, Recommended Practice for Organizing, Managing, and Sustaining a Hazardous Materials/Weapons of Mass Destruction Response Program, <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=475>.

¹¹ Final EIS 4-224 to 4-244.

- Section 5.2.3 specifies the analysis of the impacts of the hazards identified in section 5.2.2 on the health and safety of persons in the affected area and personnel responding to the incident as well as impacts to properties, facilities, and critical infrastructure.
- Section 5.2.4 specifies an analysis of the escalation of impacts over time.
- Section 5.2.5 specifies evaluation of incidents that could have cascading impacts.
- Section 5.2.6 specifies the risk assessment to evaluate the adequacy of existing prevention and mitigation measures.

Chapter 6 of NFPA 1600 (2019 edition) covers the implementation of the plans, including health and safety of personnel, roles and responsibilities of internal and external entities, lines of authority, process for delegation of authority, liaisons with external entities, and logistics support and resource requirements.

- Section 6.3.1 specifies the implementation of a mitigation strategy that includes measures to limit or control the consequences, extent, or severity of an incident that cannot be prevented based on the results of hazard identification and risk assessment and analysis of impacts.
- Section 6.9.2 specifies that emergency response plans should identify actions to be taken to protect people, including people with disabilities and other access and functional needs.¹²
- Sections 6.6 and 6.9.4 stipulate an emergency response plan include warning, notification, and communication should be determined and be reliable, redundant, and interoperable and tested and used to alert stakeholders potentially at risk from an actual or impending incident.
- Section 6.8 specifies the development of an incident management system to direct, control, and coordinate response, continuity, and recovery operations.
- Section 6.8.1 stipulates primary and alternate emergency operations centers be established capable of managing response, continuity, and recovery operations and may be physical or virtual.

In addition, NFPA 1600 (2019 edition) Chapter 7 provides specifications for execution of the plan, Chapter 8 provides for training and education provisions, Chapter 9 provides for exercises and tests to be conducted periodically, and Chapter 10 provides for its continued maintenance and improvement.

NFPA 1616 (2020 edition) covers organizing, planning, implementing, and evaluating a program for mass evacuation, sheltering, and re-entry. Similar to NFPA

¹² NFPA 1600 defines “access and functional need” as “Persons requiring special accommodations because of health, social, economic, or language challenges.”

1600, the following sections of NFPA 1616 stipulate:

- Section 4.5 stipulates similar hazard identification, risk assessment, and requirements analysis as NFPA 1600.
- Section 5.1 stipulates plans to address the health and safety of personnel including persons with disabilities and access and functional needs.¹³
- Section 5.6 specifies a requirements analysis in sub-section 5.6.1 that is based upon the threat, hazard identification, and risk assessment. Sub-section 5.6.2(1) specifies the requirements analysis include characteristics of the potentially affected population, including persons with disabilities and other access and functional needs. In addition, sub-section 5.6.2(2) stipulates consideration of existing mandatory evacuation laws and expected enforcement of those laws. Sub-section 5.6.2(3) stipulates the requirements analysis to include characteristics of the incident that trigger consideration for evacuation based on weather, season, and ambient conditions, speed of onset, magnitude, location and direction, duration, resulting damages to essential functions, risk for cascading effects and secondary disasters, and capability of transportation routes and systems to transport life-sustaining materials (e.g., water, medical supplies, etc.) into the affected area.
- Section 5.6.3 stipulates the determination if evacuation or sheltering-in-place is appropriate to the situation and resources available based on 1) the anticipated impact and duration of the event, 2) the distance to appropriate sheltering facilities, 3) the availability of and access to transportation to those facilities, and 4) the ability to communicate with the affected population within the required timeframe.
- Section 5.6.4 stipulates the 1) establishment of a single or unified command, 2) development of information system to notify public and provide an assessment of the time needed to reach people with the information, 3) identification of appropriate sheltering facilities by location, size, types of services available, accessibility, and building safety, and 4) identification of the modes and routes for evacuee transportation and the time needed to reach them, sources of evacuee

¹³ NFPA 1616 defines “People with Access and Functional Needs” as “Persons with disabilities and other access and functional needs include those from religious, racial, and ethnically diverse backgrounds; people with limited English proficiency; people with physical, sensory, behavioral and mental health, intellectual, developmental and cognitive disabilities, including individuals who live in the community and individuals who are institutionalized; older adults with and without disabilities; children with and without disabilities and their parents; individuals who are economically or transportation disadvantaged; women who are pregnant; individuals who have acute and chronic medical conditions; and those with pharmacological dependency.”

- support services, and manpower requirements based on various potential shelters.
- Section 5.8 also has stipulations for dissemination of information on evacuation, shelter in place, and re-entry before, during, and after an incident to personnel and to the public.
 - Section 5.9 has stipulations for warning, notification, and communication needs that are reliable and interoperable and redundant where feasible that takes into account persons with disabilities and other access and functional needs.

Similar to NFPA 1600, NFPA 1616 has requirements in Chapter 6 on Implementation, Chapter 7 on Training and Education, Chapter 8 on Exercises, and Chapter 9 on Program Maintenance and Improvement with additional specifics for mass evacuation, sheltering in place and re-entry.

NFPA 1620 (2020 edition) specifies the characteristics of the facility and personnel onsite that should be within a pre-incident plan, such as emergency contact information, including those with knowledge of any supervisory, control, and data acquisition systems, communication systems, emergency power supply systems, and facility access controls as well as personnel accountability and assistance for people with self-evacuation limits, means of egress, emergency response capabilities, spill containment systems, water supply and fire protection systems, hazardous material information (e.g., safety datasheets), special considerations for responding to hazardous materials (e.g., firewater may exacerbate LNG fires, boiling-liquid-expanding-vapor explosion (BLEVE)¹⁴ potential, etc.), and access to emergency action plans developed by the facility. Similar to NFPA 1600 and NFPA 1616, NFPA 1620 section 8.5.2 also addresses the implementation of an incident management system for the duration of the event and Chapter 10 establishes maintenance of a pre-incident plan.

NFPA 1600, NFPA 1616, and NFPA 1620 provisions for threat, hazard identification, and risk assessment provisions and identification of resource requirements and gaps are also consistent with Department of Homeland Security FEMA's Comprehensive Preparedness Guide 101, Developing and Maintaining Emergency

¹⁴ The American Institute of Chemical Engineers Center for Chemical Process Safety defines a boiling-liquid-expanding-vapor-explosion or BLEVE as a "type of rapid phase transition in which a liquid contained above its atmospheric boiling point is rapidly depressurized, causing a nearly instantaneous transition from liquid to vapor with a corresponding energy release. A BLEVE of flammable material is often accompanied by a large aerosol fireball, since an external fire impinging on the vapor space of a pressure vessel is a common cause. However, it is not necessary for the liquid to be flammable to have a BLEVE occur." Center for Chemical Process Safety, *Boiling-Liquid-Expanding-Vapor Explosion (BLEVE)*, <https://www.aiche.org/ccps/resources/glossary/process-safety-glossary/boiling-liquid-expanding-vapor-explosion-bleve>, (last visited April 2023).

Operations Plans, Version 3.0, September 2021, and Comprehensive Preparedness Guide 201, Threat and Hazard Identification and Risk Assessment and Stakeholder Preparedness Review Guide, Third Edition, May 2018, and other FEMA guidance.

NFPA 470 covers the competencies and job performance requirements for emergency response personnel to incidents involving hazardous materials, including awareness level personnel (i.e., personnel onsite that would call for emergency responders and secure the scene), operations level responders (i.e., personnel responding to incident for implementing supporting actions to protection public), hazardous material technicians (i.e., personnel responding to incident for analyzing and implementing planned response), hazardous materials officers, hazardous materials safety officers, emergency medical services (EMS) personnel, incident commanders, and other specialist employees. The standard covers competencies and Job Performance Requirements, including the ability to identify hazardous material releases and hazardous materials involved and identifying surrounding conditions, such as topography, weather conditions, public exposure potential, possible ignition sources, land use and adjacent land use, overhead and underground wires and pipelines, rail lines, and highways, bodies of water, storm and sewer drains, and building information (e.g., ventilation ducts and air returns). Part of the standard also describes the ability and requirement to estimate potential outcomes in order to properly plan response strategies and tactics, and the selection and use of proper personnel protective equipment (PPE). Many of these provisions are similar and synergistic with NFPA 1600, NFPA 1616, and NFPA 1620.

NFPA 475 covers the organization, management, and sustainability of a hazardous material response program, including identifying facilities with hazardous materials, analyzing the risk of hazardous material incidents, including identifying hazardous materials at each location, (e.g., quantity, concentration, hazardous properties, etc.), type and design of containers; surrounding population and infrastructure, including vulnerable populations and critical facilities (e.g., schools, hospitals, businesses, etc.). NFPA 475 similarly calls for analyzing the risk of an incident based on the consequences of a release and predicting its behavior and estimating the probability for an incident to take place and potential for cascading incidents. NFPA 475 Chapter 7 also has provisions for resource management, including the identification, acquisition, and management of personnel, equipment, and supplies to support hazardous material response programs. NFPA 475 Chapter 8 expands upon staffing requirements and use of different staffing models and Chapter 9 expands upon training program with reference and similarities to NFPA 470.

In accordance with these recommended and generally accepted good engineering practices, Commission staff evaluated the potential impacts from incidents caused by a range of natural hazards, accidental events, intentional events, and potential for cascading damage at the LNG terminal, including scenarios that would lead to a potential catastrophic failure of a tank required to be accounted in emergency response plans by PHMSA regulations in 49 CFR § 193.2509, and along the LNG carrier route using the

Zones of Concern referenced in USCG Navigation and Vessel Inspection Circular (NVIC) 01-11.¹⁵ In addition, Commission staff identified potential emergency response needs based on the potential impacts to and characteristics of the population and infrastructure for potential intentional and accidental incidents along the LNG marine vessel route and at the LNG terminal. Consistent with these practices, Commission staff evaluated the potential hazards from incidents, the potential impacts to areas from incidents and the evaluation of characteristics of population, including those with potential access and functional needs, and infrastructure that require special considerations in pre-incident planning, including but not limited to:

- daycares;
- elementary, middle, and high schools and other educational facilities;
- elderly centers and nursing homes and other boarding and care facilities;
- detention and correctional facilities;
- stadiums, concert halls, religious facilities, and other areas of assembly;
- densely populated commercial and residential areas, including high rise buildings, apartments, and hotels;
- hospitals and other health care facilities;
- police departments, stations, and substations;
- fire departments and stations;
- military or governmental installations and facilities;
- major transportation infrastructure, including evacuation routes, major highways, airports, rail, and other mass transit facilities as identified in external impacts section; and
- industrial facilities that could exacerbate the initial incident, including power plants, water supply infrastructure, and hazardous facilities with quantities that exceed thresholds in U.S. Environmental Protection Agency (EPA) RMP and/or OSHA PSM standards as identified in external impacts section.

Many of these facilities are also identified and defined in NFPA 101, Life Safety Code, and require emergency action plans. NFPA 101 is currently used by every U.S. state and adopted statewide in 43 of the 50 states.¹⁶ Texas adopted and follows

¹⁵ NVIC 01-11,
<https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2011/NVIC%2001-2011%20Final.pdf>, accessed January 2023.

¹⁶ NFPA, NFPA 101 Fact Sheet,
<https://www.nfpa.org/assets/files/AboutTheCodes/101/NFPA101FactSheet0809.pdf>, accessed January 2023.

NFPA 101 (2015 edition) without amendments.¹⁷ These areas are also similar to “identified sites” defined in 49 C.F.R. § 192 that define high consequence areas and those identified within Pipelines and Informed Planning Alliance (PIPA) for special land use planning considerations near pipelines.¹⁸

B. Potential Hazards

An incident can result in various potential hazards and are initiated by a potential liquid and/or gaseous release with the formation of vapor at the release location, as well as from any liquid that pooled. The fluid released may present low or high temperature hazards and may result in the formation of toxic or flammable vapors. The type and extent of the hazard will depend on the material released, the storage and process conditions, and the volumes and durations released.

Exposure to either cold liquid or vapor could cause freeze burns and depending on the length of exposure, more serious injury or death. However, spills would be contained to on-site areas and the cold state of these releases would be greatly limited due to the continuous mixing with the warmer air. The cold temperatures from the release would not present a hazard to the public, which would not have access to onsite areas. The cold temperatures may also quickly cool any materials contacted by the liquid on release, causing extreme thermal stress in materials not specifically designed for such conditions. These thermal stresses could subsequently subject the material to brittleness, fracture, or other loss of tensile strength and result in cascading failures. However, regulatory requirements and the Environmental Conditions in the Authorization Order would ensure that these effects would be accounted for in the design of equipment and structural supports.

A rapid phase transition (RPT) can occur when a cryogenic liquid is spilled onto water and changes from liquid to gas, virtually instantaneously. Unlike an explosion that releases energy and combustion products from a chemical reaction, an RPT is the result of heat transferred to the liquid inducing a change to the vapor state. RPTs have been observed during LNG test spills onto water. In some test cases, the overpressures generated were strong enough to damage test equipment in the immediate vicinity of the

¹⁷ Up Codes, Texas Codes, <https://up.codes/codes/texas>, accessed January 2023; Texas State Fire Marshal, Standards of Inspection, <https://www.tdi.texas.gov/fire/fmfsinotices.html>, accessed January 2023.

¹⁸ Pipelines and Informed Planning Alliance, Partnering to Further Enhance Pipeline Safety in Communities through Risk-Informed Land Use Planning, Final Report of Recommended Practices, <https://primis.phmsa.dot.gov/comm/pipa/landuseplanning.htm>, November 2010.

LNG release point. The sizes of the overpressure events have been generally small and are not expected to cause significant damage. Six of the 18 Coyote spills¹⁹ produced RPT explosions. Most were early RPTs that occurred immediately with the spill, and some continued for the longer periods. Including RPTs near the end of the spills on three tests. LNG composition, water temperature, spill rate and depth of penetration all seem to play a role in RPT development and strength. The maximum strength RPT yielded equivalent to up to 6.3 kilograms of TNT free-air point source at the maximum spill rate of 18 m³/min (4,750 gpm). This would produce an approximate 1 psi overpressures less than 100 feet from the spill source. These events are typically limited to the area within the spill and are not expected to cause damage outside of the area engulfed by the LNG pool. However, a RPT may affect the rate of pool spreading and the rate of vaporization for a spill on water.

C. Vapor Dispersion

Depending on the size and product of the release, liquids may form a liquid pool and vaporize. Additional vaporization would result from exposure to ambient heat sources, such as water or soil. The vapor may form a toxic or flammable cloud depending on the material released. The dispersion of the vapor cloud will depend on the physical properties of the cloud, the ambient conditions, and the surrounding terrain and structures. Generally, a denser-than-air vapor cloud would sink to the ground and would travel with the prevailing wind, while a lighter-than-air vapor cloud would rise and travel with the prevailing wind. The density will depend on the material releases and the temperature of the material. For example, an LNG release would initially form a denser than-air vapor cloud and transition to lighter-than-air vapor cloud as the vapor disperses downwind and mixes with the warm surrounding air. However, experimental observations and vapor dispersion modeling indicate an LNG vapor cloud would not typically be warm, or buoyant, enough to lift off from the ground before the LNG vapor cloud disperses below its lower flammable limit (LFL).

A vapor cloud formed following an accidental release would continue to be hazardous until it dispersed below toxic levels and/or flammable limits. Toxicity is

¹⁹ Goldwire, H.C., et al, Coyote Series Data Report LLNL/NWC 1981 LNG Spill tests Dispersion, Vapor Burn, and Rapid Phase Transition, Lawrence Livermore Laboratory, UCID-19952, Volume 1, October 1983. In 1981, a series of LNG spill experiments were performed at the Naval Weapons Center, located at China Lake, California, they are commonly referred to as the Coyote series. There was a total of ten Coyote series experiments, which included the study of vapor dispersion and burning vapor clouds and rapid-phase transition explosions. *Id.*

primarily dependent on the airborne concentration of the toxic component and the exposure duration, while flammability of the vapor cloud is primarily dependent just on the concentration of the vapor when mixed with the surrounding air. In general, higher concentrations within the vapor cloud would exist near the spill, and lower concentrations would exist near the edge of the cloud as it disperses downwind.

Toxicity is defined by several different agencies for different purposes. Acute Exposure Guideline Level (AEGL) and Emergency Response Planning Guidelines (ERPG) can be used for emergency planning, prevention, and response activities related to the accidental release of hazardous substances. Other federal agencies, such as the Department of Energy (DOE), EPA, and National Oceanic and Atmospheric Administration (NOAA), use AEGLs and ERPGs as the primary measure of toxicity.

There are three AEGLs and three ERPGs, which are distinguished by varying degrees of severity of toxic effects with AEGL-1 and ERPG-1 (level 1) being the least severe to AEGL-3 and ERPG-3 (level 3) being the most severe.

- AEGL-1 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic non sensory effects. However, these effects are not disabling and are transient and reversible upon cessation of the exposure.
- AEGL-2 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long lasting adverse health effects or an impaired ability to escape.
- AEGL-3 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

The EPA directs the development of AEGLs in a collaborative effort consisting of committee members from public and private sectors across the world. Commission staff uses AEGLs preferentially as they are more inclusive and provide toxicity levels at various exposure times (10 minutes, 30 minutes, 1 hour, 4 hours, and 8 hours). The use of AEGLs is also preferred by the DOE and NOAA. Under the EPA RMP regulations in 40 C.F.R. § 68, the EPA currently requires the determination of distances to toxic concentrations based on ERPG-2 levels. ERPG levels have similar definitions but are based on the maximum airborne concentration below which it is believed nearly all individuals could be exposed for up to 1 hour without experiencing similar effects defined in each of the AEGLs. The EPA provides ERPGs (1 hour) for a list of chemicals. These toxic concentration endpoints are comparable to AEGLs endpoints.

In addition, any non-toxic release that does not contain oxygen would be classified

as simple asphyxiants and may pose extreme health hazards, including death, if inhaled in significant quantities within a limited time. Very cold methane and heavier hydrocarbons vapors may also cause freeze burns. However, the locations of concentrations where cold temperatures and oxygen-deprivation effects could occur are greatly limited due to the continuous mixing with the warmer air surrounding the spill site. For that reason, exposure injuries from contact with releases of methane, nitrogen, and heavier hydrocarbons normally represent negligible risks to the public.

Flammable vapors can develop when a flammable material is above its flash point and concentrations are between the LFL and the upper flammable limit (UFL). Concentrations between the LFL and UFL can be ignited, and concentrations above the UFL or below the LFL would not ignite.

The extent of the affected area and the severity of the impacts on objects within a vapor cloud would primarily be dependent on the material, quantity, and duration of the initial release, the surrounding terrain, and the weather (e.g., wind speed and direction, temperature, humidity, etc.) present during the dispersion of the cloud.

D. Flammable Vapor Ignition

If the flammable portion of a vapor cloud encounters an ignition source, a flame would propagate through the flammable portions of the cloud. In most circumstances, the flame would be driven by the heat it generates. This process is known as a deflagration, or a flash fire, because of its relatively short duration. However, exposure to a deflagration, or flash fire, can cause severe burns and death, and can ignite combustible materials within the cloud. If the deflagration in a flammable vapor cloud accelerates to a sufficiently high rate of speed, pressure waves that can cause damage would be generated. As a deflagration accelerates to super-sonic speeds, the large shock waves produced, rather than the heat, would begin to drive the flame, resulting in a detonation. The flame speeds are primarily dependent on the reactivity of the fuel, the ignition strength and location, the degree of congestion and confinement of the area occupied by the vapor cloud, and the flame travel distance. Once a vapor cloud is ignited, the flame front may propagate back to the spill site if the vapor concentration along this path is sufficiently high to support the combustion process. When the flame reaches vapor concentrations above the UFL, the deflagration will transition to a pool or jet fire back at the source. If ignition occurs soon after the release begins, a fireball may occur near the source of the release and would be of a relatively short duration compared to an ensuing jet or pool fire. The extent of the affected area and the severity of the impacts on objects in the vicinity of a fire would primarily be dependent on the material, quantity, and duration of the fire, the surrounding terrain, and the ambient conditions present during the fire.

E. Overpressures

If the deflagration in a flammable vapor cloud accelerates to a sufficiently high rate of speed, pressure waves that can cause damage would be generated. As a deflagration accelerates to super-sonic speeds, large pressure waves are produced, and a shock wave is created. In this scenario, the shock wave, rather than the heat, would drive the flame, resulting in a detonation. Deflagrations or detonations are generally characterized as “explosions” as the rapid movement of the flame and pressure waves associated with them cause additional damage beyond that from the heat. The amount of damage an explosion causes is dependent on the amount the produced pressure wave is above atmospheric pressure (i.e., an overpressure) and its duration (i.e., pulse). For example, a 1 psi overpressure, often cited as a safety limit in NFPA 59A (2019 edition) and U.S. regulations, is associated with glass shattering and traveling with velocities high enough to lacerate skin.

Flame speeds and overpressures are primarily dependent on the reactivity of the fuel, the ignition strength and location, the degree of congestion and confinement of the area occupied by the vapor cloud, and the flame travel distance.

The potential for unconfined LNG vapor cloud detonations was investigated by the USCG in the late 1970s at the Naval Weapons Center in China Lake, California. Using methane, the primary component of natural gas, several experiments were conducted to determine whether unconfined LNG vapor clouds would detonate. Unconfined methane vapor clouds ignited with low-energy ignition sources (13.5 joules), produced flame speeds ranging from 12 to 20 mph. These flame speeds are much lower than the flame speeds associated with a deflagration with damaging overpressures or a detonation.

To examine the potential for detonation of an unconfined natural gas cloud containing heavier hydrocarbons that are more reactive, such as ethane and propane, the USCG conducted further tests on ambient-temperature fuel mixtures of methane-ethane and methane-propane. The tests indicated that the addition of heavier hydrocarbons influenced the tendency of an unconfined natural gas vapor cloud to detonate. Less processed natural gas with greater amounts of heavier hydrocarbons would be more sensitive to detonation.

Although it has been possible to produce damaging overpressures and detonations of unconfined LNG vapor clouds, the feed gas stream proposed for the project would have lower ethane and propane concentrations than those that resulted in damaging overpressures and detonations. The substantial amount of initiating explosives needed to create the shock initiation during the limited range of vapor-air concentrations also renders the possibility of detonation of these vapors at an LNG plant as unrealistic. Ignition of a confined LNG vapor cloud could result in higher overpressures. To prevent

such an occurrence, Texas LNG would take measures to mitigate the vapor dispersion and ignition into confined areas, such as buildings. Texas LNG would install hazard detection devices at all combustion and ventilation air intake equipment to enable isolation and deactivation of any combustion equipment whose continued operation could add to, or sustain, an emergency. In general, the primary hazards to the public from an LNG spill that disperses to an unconfined area, either on land or water, would be from dispersion of the flammable vapors or from radiant heat generated by a pool fire.

In comparison with LNG vapor clouds, there is a higher potential for unconfined propane clouds to produce damaging overpressures. This has been shown by multiple experiments conducted by the Explosion Research Cooperative to develop predictive blast wave models for low, medium, and high reactivity fuels and varying degrees of congestion and confinement. The experiments used methane, propane, and ethylene, as the respective low, medium, and high reactivity fuels. In addition, the tests showed that if methane, propane, or ethylene are ignited within a confined space, such as in a building, they all have the potential to produce damaging overpressures.

Fires and overpressures may also cause failures of nearby storage vessels, piping, and equipment if not properly mitigated. These failures are often termed cascading events or domino effects and can exceed the consequences of the initial hazard. The failure of a pressurized vessel could cause fragments of material to fly through the air at high velocities, posing damage to surrounding structures and a hazard for operating staff, emergency personnel, or other individuals in proximity to the event. In addition, failure of a pressurized vessel when the liquid is at a temperature significantly above its normal boiling point could result in a BLEVE. BLEVEs can produce overpressures when the superheated liquid rapidly changes from a liquid to a vapor upon the release from the vessel. BLEVEs of flammable fluids may also ignite upon its release and cause a subsequent fireball.

F. Potential Infrastructure Impacts from LNG Facilities

The final EIS for the Texas LNG Project assessed potential impacts to the public and whether the project would operate safely, reliably, and securely. The Texas LNG Project would be subject to design requirements and would include mitigation to meet regulation requirements and the conditions of the Commission's Authorization Order. Although the likelihood of incidents and hazards described in the final EIS are extremely low due to the mitigation required by regulations and Environmental Conditions, potential impacts from these hazards could impact onsite personnel and offsite public.²⁰

²⁰ Specific distances of potential impacts from incidents at an LNG terminal have not been provided at this time to try and balance the potential security interests in releasing such information. Specific distances for various hazards described would be

Commission staff evaluated a range of releases to evaluate the potential impacts to populations and infrastructure within vicinity of the plant. Impacts would vary based on the initiating event and subsequent release characteristics (e.g., size, location, direction, process conditions, etc.), hazard (i.e., vapor dispersion, overpressures, fires, BLEVE and pressure vessel bursts), weather conditions, and surrounding terrain. Distances to radiant heats of 5 kW/m^2 (or approximately $1,600 \text{ BTU/ft}^2\text{-hr}$) from fires produced by accidental and intentional acts could impact onsite personnel or offsite public. For example, Section 2.2.2.2 in NFPA 59A-2001, incorporated by reference in PHMSA regulations in 49 C.F.R. § 193, requires spill containments, serving vaporization, process, or LNG transfer area, to contain liquid releases from 2-inch diameter holes and guillotine releases of piping less than 6-inches in diameter. Additionally, PHMSA siting regulations for flammable vapor dispersion and thermal radiation exclusion zones limit the dispersion of flammable vapors and $1,600 \text{ BTU/ft}^2\text{-hr}$ radiant heat from LNG pool fires in those spill containment systems in certain weather conditions from extending beyond the control of the operator or government agency and prevent it from extending onto areas accessible by the public. Environmental Condition 84 of the Authorization Order requires spill containment systems to capture all liquid from guillotine ruptures of the single largest line and largest vessel(s) to limit their pool spread and vaporization. This effectively limits the extent of the $1,600 \text{ BTU/ft}^2\text{-hr}$ radiant heat from pool fires to onsite for even the largest releases from a single source and considerably reduces the dispersion distances to flammable vapors. However, ignition of releases larger than those used in the siting analyses can result in $1,600 \text{ BTU/ft}^2\text{-hr}$ and $10,000 \text{ BTU/ft}^2\text{-hr}$ radiant heats from jet and pool fires that extend offsite onto publicly accessible areas.

The only offsite infrastructure that could be impacted by $10,000 \text{ BTU/ft}^2\text{-hr}$ radiant heat from a fire would be a portion of Texas State Highway 48 with no impacts to nearby communities. The offsite infrastructure that could be impacted by $1,600 \text{ BTU/ft}^2\text{-hr}$ radiant heat from a fire would be the authorized Texas LNG facility²¹ and the infrastructure within the $10,000 \text{ BTU/ft}^2\text{-hr}$ radiant heat with no impact to nearby communities. The unignited vapor dispersion from a catastrophic failure of an LNG storage tank is extremely unlikely but, if it occurred, could extend farther offsite and could impact the following critical infrastructure: commercial areas including the Port Isabel-San Benito Navigation District, and the Space X assembly facility; numerous local

provided in emergency response plans for reference and use by emergency responders. Further, potential hazards have been described and potential impacts to communities are disclosed to balance the importance of public disclosure and transparency on the balance of potentially releasing information that has not been previously released and could be used by intentional actors.

²¹ *Texas LNG Brownsville LLC, Order Granting Authorization Under Section 3 of the Natural Gas Act*, 169 FERC ¶ 61,130

government buildings including the Port Isabel Police Department, Cameron County Precinct 1 Constable's Office, Port Isabel City Fire Department, Cameron County Tax Assessor-Collector Office, Port Isabel City Hall, and Port Isabel City Social Worker Office; two health care facilities including the Port Isabel Health Clinic, the Luna Medical Clinic, and Emergency Medical Services; and several major roadways, including the Queen Isabel Causeway, Texas State Highway 100, and Texas State Highway 48. Several communities within the extent of the unignited vapor release from a catastrophic failure of one of the LNG storage tanks could include multiple residential homes, apartment complexes, several schools including Garriga Elementary School, Derry Elementary School, Port Isabel Junior High School, Port Isabel High School, Port Isabel Independent School District, several child-care facilities including the Little Learners Academy, Esperanza B. Garza Head Start, and Beacon Bay Head Start, hotels, and places of worship.

G. Potential Infrastructure Impacts Along LNG Marine Vessel Route

As LNG marine vessels proceed along the intended transit route, the estimated impacts would extend onto populated areas and infrastructure. These distances are provided as Zones of Concern in the publicly available guidance NVIC 01-11²² used by the USCG and correspond to 37.5 kW/m² (approximately 12,000 BTU/ft²-hr) radiant heats from fires for Zone 1, 5 kW/m² (approximately 1,600 BTU/ft²-hr) radiant heats from fires for Zone 2, and flammable vapor dispersion distances for Zone 3. The areas, including a description of the infrastructure and communities, impacted by the three different hazard zones were provided for accidental and intentional events in the Texas LNG final EIS.²³

H. Potential Impacts on People with Access and Functional Needs and Environmental Justice Communities

Commission staff used EJScreen²⁴ as an initial screening tool to identify the potential impacts from incidents along the LNG marine vessel transit route and at the LNG terminal, including potential impacts to people with access and functional needs as defined in NFPA 1600 and 1616. Table 1 shows the resultant percentages of people with potential access and functional needs based on 2016-2020 U.S. Census Bureau, American

²² NVIC 01-11, <https://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/5ps/NVIC/2011/NVIC%2001-2011%20Final.pdf>, accessed January 2023.

²³ Texas LNG Final EIS, pages 4-211 to 4-212 in Figures 4.12.3-1 and 4.12.3-2.

²⁴ EPA, EJScreen, <https://ejscreen.epa.gov/mapper/>, accessed December 2022.

Community Survey (ACS) as follows.²⁵

²⁵ Based on EPA, EJScreen User Guide Version 2.1, 2022, the impact area would aggregate appropriate portions of the intersecting block groups, weighted by population, to create a representative set of data for the entire ring area, honoring variation and dispersion of the population in the block groups within it. For each indicator, the result is a population-weighted average, which equals the block group indicator values averaged over all residents who are estimated to be inside the impact area. A weight factor for each block group is determined by summing each block point population percentage for that block group. If the impact area touches part of a neighboring block group that contains no block points, nothing will be aggregated; if an impact area intersects a number of block groups, EJScreen indices will be aggregated within each block group based on the affiliated block points. The aggregation is done by using factor-weighted block points.

TABLE 1**People With Access and Functional Needs within Potential Impact Areas**

Potential Incident Impact Area	Population Density (per square mile)¹	Households¹	Housing Units¹	Age 0-4 (percent)¹	Age 65+ (percent)¹	Linguistically Isolated Households (percent)^{1, 2, 3}
Zone 1 (LNG marine vessel - Accidental)	0	0	0	0	0	0
Zone 2 (LNG marine vessel - Accidental)	455	75	397	2%	34%	0
Zone 3 (LNG marine vessel - Accidental)	235	256	1,359	2%	34%	0
Zone 1 (LNG marine vessel - Intentional)	2	0	1	2%	34%	0
Zone 2 (LNG marine vessel - Intentional)	211	195	1,033	2%	34%	0
Zone 3 (LNG marine vessel - Intentional)	228	1,557	4,093	5%	22%	14.9%
10,000 BTU/ft ² -hr (LNG Terminal)	0	0	0	0%	0%	0
1,600 BTU/ft ² -hr (LNG Terminal)	0	0	0	0%	0%	0
Flammable Vapor Cloud (LNG Terminal)	208	3,102	5,979	9%	19%	13.2%

¹ American Community Survey, 2016-2020, ACS Estimates² Households in which no one 14 and over speaks English “very well” or speaks English only.³ Calculated by dividing the number of linguistically isolated households by the total number of households multiplied by 100.

The worst-case distances from these potential incidents would potentially impact six census block groups, all of which are considered environmental justice communities. The block groups located with environmental justice communities that exceed the thresholds for minority and low income would include Census Tracts 142.02 Block Group 2, 127 Block Group 2, 123.04 Block Group 2, 123.04 Block Group 4 (based on the minority and low-income thresholds); Census Tract 123.04 Block Group 3 (based on the minority threshold); and Census Tract 123.04 Block Group 1 (based on low-income threshold).

I. Emergency Response Plans and Mitigation

In order to mitigate these potential offsite risks, this order modifies, in Appendix A, the Emergency Response Plan and Cost Sharing Plan Environmental Conditions 36 and 37 from Authorization Order. The modified language specifies emergency response and cost sharing considerations related to public education materials, including those with access and functional needs and environmental justice communities, on proposed evacuation routes and shelter in place locations, first responder training, emergency command centers and equipment, and public communication methods and devices. These revisions will further enhance the safety and security measures beyond that which would normally be required at the LNG terminal by the minimum standards for LNG safety promulgated in PHMSA regulations under 49 C.F.R. § 193 and USCG regulations under 33 C.F.R. § 127 and 33 C.F.R. § 105.

As stated in Sandia National Laboratories Report, Guidance on Risk Analysis and Safety Implications of a Large LNG Spill Over Water, SAND2004-6258, which was the basis for the Zones of Concern and referenced in NVIC 01-011, Zone 1 represents “risks and consequences of an LNG spill could be significant and have severe negative impacts” and radiant heat demarked by this zone “poses a severe public safety and property hazard, and can damage or significantly disrupt critical infrastructure.” Subsequently, the Sandia report concludes that for accidental Zone 1 impacts, “risk management strategies for LNG operations should address both vapor dispersion and fire hazards” and the most rigorous deterrent measures, such as vessel security zones, waterway traffic management, and establishment of positive control over vessels are options to be considered as elements of the risk management process.” Zone 1 is based upon a 37.5 kW/m² radiant heat from a fire, which would cause significant damage to equipment and structures that are located within 1,640 feet.²⁶ Sandia recommends that “incident management and emergency response measures should be carefully evaluated to ensure adequate resources (i.e., firefighting, salvage, etc.) are available for consequence and risk mitigation.”

Sandia indicates Zone 2 represents where radiant heat “transitions to less severe hazard levels to public safety and property” and the consequence of an accidental LNG spill are reduced and risk reduction and mitigation approaches and strategies can be less extensive.” Zone 2 is based upon a 5 kW/m² radiant heat, which would cause significant impacts to individuals, but would not be expected to significantly impact most structures.²⁷ Sandia concludes that for accidental Zone 2 impacts, “risk management

²⁶ Texas LNG Final EIS 4-211 to 4-212 (describing the specifics of Sandia Zone 1 impacts).

²⁷ Texas LNG Final EIS 4-211 to 4-212 (describing the specifics of Sandia Zone 2 impacts).

strategies for LNG operations should focus on approaches dealing with both vapor dispersion and fire hazards” and “should include incident management and emergency management and emergency response measures, such as ensuring areas of refuge (e.g., enclosed areas, buildings) are available, development of community warning signals, and community education programs to ensure persons know what precautions to take.”

Sandia indicates Zone 3 represents “risks and consequences to people and property of an accidental LNG spill over water are minimal” and radiant heat “poses minimal risks to public safety and property.” Zone 3 is based upon the dispersion distance to flammable vapors under worst-case wind conditions.²⁸ In the rare circumstance that the flammable vapors are not ignited until later, there could be flash fires or explosions depending on congestion, confinement, and ignition strength and location. Subsequent pool fires that would be demarked from the Zone 1 and 2 fire hazard distances, Sandia concludes that for accidental Zone 3 impacts, “risk reduction and mitigation strategies can be significantly less complicated or extensive” and “should concentrate on incident management and emergency response measures that are focused on dealing with vapor cloud dispersion . . .” such as ensuring “areas of refuge are available, and community education programs . . . to ensure that persons know what to do in the unlikely event of a vapor cloud.” Sandia makes similar recommendations for the Zones of Concern for intentional acts. The modified Emergency Response Plan and Cost Sharing Plan Environmental Conditions 36 and 37 in Appendix A incorporate the considerations from the Sandia recommendations and would be consistent with the recognized and generally accepted good engineering practices for evacuating and sheltering in place, such as NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470, and NFPA 475.

As described in the final EIS, Commission staff evaluated Rio Grande’s application with a focus on potential hazards from within the terminal and near the site, including external events, which may have the potential to cause damage or failure to the project facilities. Based on these potential hazards, staff examined the project’s engineering design features that would mitigate potential hazards and any risk to safety and reliability.²⁹ When reviewing an applicant’s engineering design for a project, the Commission requires it to be site-specific and developed to the extent that further detailed design would not result in significant changes to the siting considerations, basis of design, operating conditions, major equipment selections, equipment design conditions, or safety system designs. The engineering design that staff evaluated included: process design; mechanical design; hazard mitigation design for the spill containment design; spacing and plant layout design; ignition control design; hazard detection; emergency shutdown and depressurization system design; hazard control

²⁸ Final EIS 4-211 to 4-212 (describing the specifics of Sandia Zone 3 impacts).

²⁹ *Id.* at 4-211 to 4-244.

design; passive cryogenic and fire protection design; firewater system design; geotechnical and structural design, including natural hazards design; and onsite and offsite emergency response plans.³⁰

To analyze the reliability and safety of these designs, staff considered the occurrence and likelihood of potential hazards and the likely severity of consequences based on past incidents and validated hazard modeling. As part of its review, staff recommended 93 mitigation measures in the final EIS, which were adopted as conditions in the Authorization Order.³¹ In addition to the earlier review, staff reevaluated the potential impacts along the LNG marine vessel transit route and at the LNG terminal as described above.³² This review resulted in modifications to Environmental Conditions 53 and 54 from the Authorization Order related to emergency response and cost sharing plans in order to further mitigate potential offsite risks.³³ Based on these reviews, Commission staff determined that the risk (i.e., likelihood and consequence) of accidental and intentional events would be less than significant with implementation of the proposed safety and security recommendations that further enhance the safety and security measures above what is required at the LNG terminal by PHMSA regulations under 49 C.F.R. § 193 and USCG regulations under 33 C.F.R. Part 127 and 33 C.F.R. Part 105, and those required for the LNG marine vessel by USCG regulations under 33 C.F.R. Part 104 and 46 C.F.R. Part 154.

The Energy Policy Act of 2005 requires LNG terminal operator's Emergency Response Plan be developed in consultation with the USCG and State and local agencies and be approved by the commission prior to final approval to begin construction. To satisfy this requirement, this order modifies Environmental Conditions 36 and 37 in Appendix A of this order, that prior to construction of final design, Texas LNG shall file with the Secretary a revised Emergency Response Plan (ERP), including evacuation and any sheltering and re-entry, a request for review and written approval by the Office of Energy Projects Director or his designee. The ERP must be developed and coordinated with the USCG; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and other appropriate federal agencies. This plan must be consistent with recommended and good engineering practices, as defined in NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470, NFPA 475, or approved equivalents, and based on potential impacts and onsets of hazards from accidental and intentional events

³⁰ *Id.* (detailing staff's evaluation of the project's engineering design).

³¹ Authorization Order, 169 FERC ¶ 61,130 at Env't Conditions 31-125.

³² *See supra* at C-19 & C-20.

³³ *See supra* Order on Remand and Amending Certificate at P 64.

along the LNG marine vessel route and potential impacts and onset of hazards from accidental and intentional events at the LNG terminal, including but not limited to a catastrophic failure of the largest LNG tank. The plan must also address any special considerations and pre-incident planning for infrastructure and public with access and functional needs and must include at a minimum:

- a. materials and plans for periodic dissemination of public education and training materials in English and Spanish for potential hazards and impacts, identification of potential hazards, and steps for public notification, evacuation, and shelter in place within any transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;
- b. plans to competently train emergency responders required to effectively and safely respond to hazardous material incidents including, but not limited to LNG fires and dispersion;
- c. plans to competently train emergency responders to effectively and safely evacuate or shelter public within transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;
- d. designated contacts with federal, state and local emergency response agencies responsible for emergency management and response within any transient hazard areas along the marine vessel route, and within hazard areas from LNG terminal;
- e. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;
- f. scalable procedures for mobilizing response and establishing a unified command, including identification, location, and design of any emergency operations centers and emergency response equipment required to effectively and safely to respond to hazardous material incidents and evacuate or shelter public within transient hazard areas along the marine vessel route, and within LNG terminal hazard areas;
- g. scalable procedures for notifying public, including identification, location, design, and use of any permanent sirens or other warning devices required to effectively communicate and warn the public prior to onset of debilitating hazards within any transient hazard areas along the LNG marine vessel route and within hazard areas from LNG terminal;
- h. scalable procedures for evacuating the public, including identification, location, design, and use of evacuation routes/methods and any mustering locations required effectively and safely evacuate public within any transient hazard areas along the LNG marine transit route and within hazard areas from LNG terminal; and
- i. scalable procedures for sheltering the public, including identification, location, design, and use of any shelters demonstrated to be needed and demonstrated to effectively and safely shelter public prior to onset of debilitating hazards within transient hazard areas that may better benefit from sheltering in place (i.e., those within Zones of Concern 1 and 2), along the route of the LNG marine vessel and

within hazard areas that may benefit from sheltering in place (i.e., those within areas of 1,600 BTU/ft²-hr and 10,000 BTU/ft²-hr radiant heats from fires with farthest impacts, including from a catastrophic failure of largest LNG tank) of the LNG terminal.

Environmental Condition 36 requires Texas LNG to notify Commission staff of all planning meetings in advance and to report progress on the development of its Emergency Response Plan at 3-month intervals.

The Energy Policy Act of 2005 requires LNG terminal operators develop a cost-sharing plan to reimburse direct costs to state and local agencies. To satisfy this requirement, Environmental Condition No. 37 requires Texas LNG to provide a Cost Sharing Plan that includes sustained funding of any requirement or resource gap analysis identified above to be needed and to effectively and safely evacuate and shelter public and required to effectively and safely respond to hazardous material incidents. Once submitted by Texas LNG, we would evaluate the revised Emergency Response Plan and Cost Sharing Plan in accordance with recommended and good engineering practices such as, but not limited to, NFPA 1600, NFPA 1616, NFPA 1620, NFPA 470 and NFPA 475, or approved equivalents.

Based on our preliminary analysis of the hazards from the LNG facilities and along the LNG marine vessel route and the Environmental Conditions set forth in the Authorization Order and modified Environmental Conditions herein, Texas LNG must provide additional information, for review and approval, on development of emergency response plans prior to construction of final design. Texas LNG will also have to file three dimensional drawings, for review and approval, under the Environmental Condition 41 of the Authorization Order that demonstrate there is a sufficient number of access and egress locations at the LNG terminal. Texas LNG is also required under Environmental Condition 36 to coordinate with local, state, and federal agencies on the development of an emergency response plan and cost sharing plan. Texas LNG has provided and must continue to provide periodic updates on the development of these plans for review and approval, and ensure they are in place prior to introduction of hazardous fluids. In addition, the Texas LNG Project will be subject to regular inspections throughout the life of the facility and will continue to require Texas LNG to file updates to the Emergency Response Plan.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Texas LNG Brownsville LLC

Docket No. CP16-116-002

(April 21, 2023)

PHILLIPS, Chairman, *concurring*:

1. I concur in today's orders.¹ In *Vecinos para el Bienestar de la Comunidad Costera v. FERC*,² the U.S. Court of Appeals for the District of Columbia Circuit held that "the Commission's analyses of the [Rio Bravo and Texas LNG projects'] impacts on climate change and environmental justice communities were deficient," and directed the Commission on remand to "revisit its determinations of public interest and convenience under Sections 3 and 7 of the NGA" after adequately considering those issues. With today's order, we have provided a full response to both deficiencies identified by the Court.

2. First, with respect to climate change, the Court held that the Commission did not adequately respond to arguments regarding why it should deploy the Social Cost of Carbon.³ In response, consistent with recent precedent, we have included the Social Cost of Carbon figures in today's order.

3. Second, with respect to environmental justice, the Court held that the Commission did not adequately explain its method for identifying environmental justice communities potentially affected by the projects. In response, we have conducted a full review of the projects' impacts on environmental justice communities. Throughout 2022, Commission staff issued multiple data requests to gather information on the projects' potential impacts on environmental communities with 50 kilometers of the facilities. In addition, we provided all stakeholders an opportunity to comment on the information submitted in those data requests, including what that information meant for environmental justice communities. While I recognize that certain of my colleagues would have preferred more process or less, I believe that the record assembled throughout the last year is an appropriate middle ground that represents an adequate basis to fully consider the issues the Court remanded to us in *Vecinos* nearly two years ago.

¹ I enter the same concurrence in this case as *Rio Grande LNG, LLC*, 183 FERC ¶ 61,046 (2023).

² 6 F.4th 1321, 1331 (D.C. Cir. 2021).

³ *Id.* at 1328-30.

4. And we did just that. Today's order conducts a full environmental justice examination using our current methods, which are consistent with EPA and CEQ guidance. As part of that investigation, and in direct response to the Court, we identified all environmental justice communities within 50 kilometers of the projects, as opposed to just those within the 2-mile radius considered in the initial orders.⁴ We then analyzed each project's impacts on affected EJ communities. As part of that full examination and due to required mitigation, we affirmed our earlier conclusion that the projects' impacts would be less than significant.

5. To that point, today's order takes an unprecedented and bipartisan step to protect environmental justice communities from potential concerns about the projects' effects on air quality. Because portions of the projects will enter service before construction is entirely completed, there is the potential that those overlapping activities could, in connection with other background emissions, contribute to an exceedance of the National Ambient Air Quality Standards (NAAQS) for certain pollutants. To mitigate that concern, the Commission is, for the first time, *sua sponte*, requiring the projects' sponsors to file a plan to ensure that the overlapping construction and operation of project do not cause any exceedance of the NAAQS. That measure allows the Commission to conclude that the projects will not have any significant air quality impacts on environmental justice communities.

6. In addition, at a broader level, this mitigation illustrates how the Commission is making progress on the critically important issue of cumulative impacts. At the Commission's March 29, 2022 Roundtable on Environmental Justice and Equity in Infrastructure Permitting, we heard from several stakeholders, including community groups, about the importance of considering cumulative impacts—i.e., not just the air emissions directly caused by a particular project, but also those emissions in conjunction with the emissions from other sources within the region. Today's order takes a critical step toward addressing that concern by requiring that the project sponsors develop a plan to ensure that incremental emissions impacts associated with these projects, on top of all sources, do not cause a NAAQS exceedance, thereby helping to protect communities, including environmental justice communities, that may venture near the projects.

For these reasons, I respectfully concur.

Willie L. Phillips
Chairman

⁴ The underlying orders identified only communities within in two miles or over three kilometers of the facility.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Texas LNG Brownsville LLC

Docket No. CP16-116-002

(Issued April 21, 2023)

CLEMENTS, Commissioner, *dissenting*:

1. I dissent from the Order¹ because (1) the Commission was required to prepare a supplemental environmental impact statement (EIS) and its failure to do so renders the Order's significance determinations unsupportable; (2) the Commission should have granted the requests it received to hold public meetings addressing the Commission's new analyses of environmental and other impacts;² and (3) I disagree with the Order's explanation for why the Commission is not determining the significance of greenhouse gas (GHG) emissions associated with the Texas LNG Terminal project.³ The Commission's failure to prepare a supplemental environmental impact statement (EIS) for the project, and to take public comment on the supplement, leaves the Commission with a fundamentally flawed record that cannot support a public interest determination for the project. I therefore dissent from the Order's ultimate conclusion that the Texas LNG Terminal is not inconsistent with the public interest.⁴

2. In performing the expanded review of EJ impacts required by the D.C. Circuit's remand decision in *Vecinos*,⁵ the Commission identified 274 additional EJ communities in the area around the Texas LNG Terminal that could be impacted by the project,

¹ *Texas LNG Brownsville LLC*, 183 FERC ¶ 61,047 (2023) (Order).

² See Order at PP 12, 15.

³ See *id.* at PP 21, 26.

⁴ *Id.* at P 84.

⁵ *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321 (D.C. Cir. 2021). The Court instructed that, on remand, the Commission must explain why it used only a two-mile radius for its analysis of EJ impacts or use a different radius. *Id.* at 1331. The Commission correctly chose to use the 50-kilometer radius in its analysis on remand because that was the only rational choice given that the Commission uses that radius for analysis of air quality impacts. See Order at P 34 & n.86 (explaining 50 kilometers is the distance that the U.S. Environmental Protection Agency uses for cumulative air modeling for major stationary sources under its Prevention of Significant Deterioration Program).

beyond the five identified in the Commission's original analysis.. The Commission has not provided members of these newly identified EJ communities any meaningful opportunity to comment on the impacts the projects may have on them or what mitigation measures would help prevent or minimize any adverse impacts. For the reasons explained below, the Commission should have issued the new environmental and safety analyses included in the body and appendices of the Order as a supplemental EIS, issued targeted notices of the supplemental EIS to potentially affected EJ communities, and allowed a reasonable period for public comment on the supplemental EIS, including oral comments at the town hall style meetings that commenters have requested. The Commission's failure to do so leaves us with an incomplete administrative record with respect to potential adverse impacts on newly identified EJ communities, the significance of those impacts, and mitigation measures to address them. In short, we lack the foundation for reasoned decision-making on these vital issues.

3. The National Environmental Policy Act (NEPA) requires agencies to prepare an EIS for "major Federal actions significantly affecting the quality of the human environment."⁶ The Commission did so before approving the Texas LNG Terminal project. However, that was not enough to meet our obligations under NEPA. According to the Council on Environmental Quality's (CEQ) regulations implementing NEPA, an agency must prepare a *supplemental* EIS if "there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts."⁷ Since issuing the original EIS for the Texas LNG Terminal project, and following the remand in *Vecinos*, the Commission has identified hundreds of additional potentially affected EJ communities. Under any reasonable interpretation of CEQ's regulation, this is significant new information "relevant to environmental concerns." For that reason alone, the Commission should have issued its new analyses as a supplemental EIS and provided an opportunity for public comment on it.⁸

⁶ 42 U.S.C. § 4332(2)(C).

⁷ 40 C.F.R. § 1502.9(d)(1)(ii). The Commission's regulations implementing NEPA provide that the Commission will comply with CEQ's regulations. *See* 18 C.F.R. § 380.1.

⁸ CEQ's regulations provide that an agency "shall prepare, publish, and file a supplement to a[n EIS] . . . as a draft and final statement." 40 C.F.R. § 1502.9(3). Although the regulation does not say so explicitly, the only purpose for publishing a draft would be for the public to comment on it. Consistent with the regulation, the Commission's practice is to issue a draft supplemental EIS for public comment. *See, e.g., Magnolia LNC, LLC; Notice of Availability of the Draft Environmental Impact Statement for the Proposed Magnolia Production Capacity Amendment*, 84 Fed. Reg. 52,881 (Oct. 3, 2019); *Florida Southeast Connection, LLC; Transcontinental Gas Pipe*

4. The other reasons a supplemental EIS is required are equally plain. In the Order, the Commission finds that, even with Texas LNG's proposed mitigation measures, during periods when construction, operation, and commissioning activities occur at the same time at the LNG terminal, the Clean Air Act National Air Ambient Quality Standards (NAAQS) may be exceeded for certain air pollutants.⁹ The Order imposes a new air pollution and monitoring condition that may prevent or reduce NAAQS violations.¹⁰ Although I agree that imposing this condition is a beneficial step to take, I cannot conclude that it will be sufficient to reduce cumulative air emissions to an insignificant level because the condition itself is vague¹¹ and we have had no public comment on whether it will be effective or what additional mitigation may be needed. The Order also finds that visual impacts on EJ communities would be significant.¹² However, it imposes no new mitigation measures to minimize those impacts. These findings in the Order themselves indicate a supplemental EIS is necessary.

5. The need for a supplemental EIS does not hinge on a definitive finding that environmental impacts will be significant. To the contrary, NEPA requires that an agency prepare an EIS where there "might" be "any" significant environmental impacts.¹³ Moreover, "the decision whether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance."¹⁴ Since the Commission has determined

Line Company, LLC; Sabal Trail Transmission, LLC; Notice of Availability of the Draft Supplemental Environmental Impact Statement for the Southeast Market Pipelines Project, 82 Fed. Reg. 16,233 (Oct. 4, 2017).

⁹ Order at PP 68, 70.

¹⁰ *Id.* at PP 70-71.

¹¹ The new condition describes the basic components of the monitoring and mitigation plan that Texas LNG must file for approval, but it leaves it to the company to flesh out the specific monitoring protocol and corrective actions to be employed. In particular, the condition does not say what Texas must do in response to a NAAQS exceedance or how quickly it must do it. *See* Order, App. A, Condition 130.

¹² *Id.* at PP 80-82.

¹³ *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, 985 F.3d 1032, 1039 (D.C. Cir. 2021) (quoting *Grand Canyon Tr. v. FAA*, 290 F.3d 339, 340 (D.C. Cir. 2002)); *see also* *Sierra Club v. Peterson*, 717 F.2d 1409, 1415 (D.C. Cir. 1983).

¹⁴ *Stand Up for California! v. U.S. Dep't of the Interior*, 994 F.3d 616, 628 (D.C. Cir. 2021) (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989)) (internal quotation marks omitted).

that there may be significant air pollution and visual impacts associated with the Texas LNG Terminal, it was required to prepare a supplemental EIS.

6. The procedures employed here run counter to NEPA's fundamental purposes. As the Supreme Court has explained, the statute's EIS requirement "ensures that the agency, *in reaching its decision*, will have available, and will carefully consider, detailed information concerning significant environmental impacts."¹⁵ NEPA's public participation requirements ensure that "relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision."¹⁶ Publishing an EIS "provides a springboard for public comment."¹⁷ By failing to issue a supplemental EIS for public comment prior to today's Order, the Commission deprived the public of any meaningful opportunity to participate. That, in turn, prevented the Commission from reflecting in its decision today essential information the public generally and affected EJ communities otherwise could have provided on the Commission's new environmental and safety analyses.

7. Embedding the Commission's new environmental and safety analyses in the Order and its appendices is no substitute for the public notice and comment process under NEPA. The Commission does not send out notices of its orders to the mailing list compiled for purposes of the original EIS process. And it certainly does not send targeted notices to members of newly identified EJ communities. Consequently, the hundreds of EJ communities potentially impacted by the Texas LNG Terminal project have no practical way of even discovering that they are within the project's potential impact zone.

8. Failing to allow meaningful public participation is not just some technical error. Rather, public input provides the foundation for an agency's substantive decisions. The procedures used here not only violated NEPA, but also undermined the Commission's ability to engage in reasoned decision-making, as it is required to do under the Administrative Procedure Act (APA).¹⁸ That is because the Commission does not have a

¹⁵ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (emphasis added); *see also Marsh*, 490 U.S. at 371 ("[B]y focusing Government and public attention on the environmental effects of proposed agency action . . . NEPA ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct.") (citations omitted); 40 C.F.R. § 1500.1(a) ("The purpose and function of NEPA is satisfied if Federal agencies have considered relevant environmental information, and the public has been informed regarding the decision-making process.").

¹⁶ *Robertson*, 490 U.S. at 349.

¹⁷ *Id.*

¹⁸ 5 U.S.C. § 706(2)(A); *see also Motor Vehicle Mfrs. Ass'n of the U.S. v. State*

complete record reflecting input from the hundreds of newly identified EJ communities, or from the public generally, on the new environmental and safety analyses.

9. Even if the Commission were not legally required to issue a supplemental EIS for public comment, doing so would be the right way to implement the applicable Executive Orders (EOs) and guidance on EJ.¹⁹ These documents call for identification, analysis, and mitigation of impacts on EJ communities. Where agencies have identified potentially affected minority and/or low income communities, the identification “should trigger” an “enhanced outreach effort to assure that low-income and minority populations are engaged in public participation.”²⁰ Section 5-5 of the 1994 EJ EO states that agencies “shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.”²¹ Furthermore, the 1997 CEQ Guidance specifically instructs that agencies “should develop effective public participation strategies” and “overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation.”²² The sad fact is that the Commission has made no effort to inform potentially affected EJ communities of its new environmental and safety analyses, let alone make the analyses

Farm Mut. Auto. Ins. Co., 463 U.S. 29, 52 (1983) (requiring that an agency’s explanation be a “product of reasoned decisionmaking” under the APA); *Vecinos*, 6 F.4th at 1330 (“[A] petitioner may challenge an agency’s environmental justice analysis as arbitrary and capricious under NEPA and the APA.”); *Coliseum Square Ass’n v. Jackson*, 465 F.3d 215, 232 (5th Cir. 2006) (finding an agency’s environmental justice considerations reviewable under the “arbitrary and capricious” standard of the APA).

¹⁹ The Commission states that it complies with the relevant EOs and guidance. *See* Order at PP 28-29; *see generally* Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994) (1994 EJ EO); Presidential Memorandum, Executive Order on Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, 1 Pub. Papers 241 (Feb. 11, 1994) (1994 EJ Memo); Federal Interagency Working Group on Environmental Justice and NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews* (2016) (Promising Practices Guidance).

²⁰ Council on Env’tl. Quality, *Guidance for Incorporating Environmental Justice Concerns in EPA’s NEPA Compliance Analysis* 28 (1998) (1998 CEQ Guidance).

²¹ 1994 EJ EO § 5-5(c) (emphasis added); *see also* 1994 EJ EO § 5-5(b) (stating that meeting this public accessibility standard may require, “whenever practicable and appropriate,” “translat[ing] crucial public documents, notices, and hearings related to human health or the environment for limited English speaking populations”).

²² CEQ, *Environmental Justice: Guidance Under the National Environmental Policy Act* 9 (1997) (1997 CEQ Guidance) (emphasis added).

“readily accessible” to them. Rather than implementing an “effective public participation strategy,” the Commission has shut the door on public participation by embedding its new analyses in the Order.

10. I am particularly troubled that neither the general public nor the newly identified EJ communities will have a meaningful opportunity to comment on the Commission’s new air monitoring and mitigation condition or other potential mitigation measures. CEQ’s guidance on EJ specifically instructs that “members of the affected communities should be consulted” when an agency is “identifying and developing potential mitigation measures to address environmental justice concerns.”²³

11. To give credit where it is due, the Commission did provide an opportunity for comment on the project sponsors’ responses to certain of Commission staff’s environmental information requests (EIRs).²⁴ However, there was *no* opportunity to comment on critical air modeling information used in the Commission staff’s cumulative air impacts analysis because that information was submitted after the comment period closed.²⁵ The necessity for, and value of, allowing public comment on the new analyses is evinced by the fact that Vecinos para el Bienestar de la Comunidad Costera and Sierra Club submitted a joint comment letter identifying discrepancies in Texas LNG’s and Rio Grande LNG’s cumulative air impacts modeling that led staff to direct the companies to reconcile their analyses and submit new cumulative air impact modeling.²⁶

12. At the Commission’s March 29, 2023, Roundtable on Environmental Justice and Equity in Infrastructure Permitting, all Commissioners acknowledged the importance of appropriately addressing EJ concerns in our proceedings. In this of all cases, where the D.C. Circuit remanded our inadequate EJ analysis, we should translate our good intentions into action and provide EJ communities a meaningful opportunity to participate. Considering our discussion at the Roundtable of how to facilitate EJ communities’ full participation, it is especially disheartening that the Order rejects

²³ 1998 CEQ Guidance at 36.

²⁴ See Order at P 11.

²⁵ See *id.* at P 77 (“Texas LNG filed [its updated air quality impact] model on January 30, 2023.”), P 11 (“[I]nitial comments were due no later than October 21, 2022, and reply comments no later than November 4, 2022.”).

²⁶ See *id.* at P 74; see also *Rio Grande LNG, LLC*, 183 FERC ¶ 61,046, at PP 87, 137 (2023) (describing Sierra Club’s joint comment letter that pointed out the modeling discrepancies between Rio Grande and Texas LNG).

requests to hold public meetings, with Spanish translation, to hear communities' concerns about the project and our new analyses.²⁷

13. I am sensitive to the comments in the record, from the project sponsor and others, that the Commission has unduly delayed its response to the court's remand in *Vecinos* and that the delay may postpone benefits the projects offer, including local employment opportunities. More generally, I desire to efficiently process applications for approval of natural gas and LNG projects, as well as the Commission's response to any court directives relating to project approvals. No member of the current Commission had control over the process for, or timing of, the Commission's response to the *Vecinos* court's remand. The question now is what to do with the hand we have been dealt. Taking procedural shortcuts is the wrong answer. In failing to meet its statutory and regulatory obligations, the Commission invites litigation challenging the Order, potentially leading to further delay. For the sake of all stakeholders, including project sponsors and communities impacted by our decisions, we must do better.

14. Finally, I dissent from the Commission's explanation of why it cannot determine the significance of GHG emissions associated with the Texas LNG Terminal.²⁸ This section of the Order could be interpreted as the Commission's definitive conclusion that the Social Cost of GHGs protocol is inherently unsuitable for determining the significance of GHG emissions associated with natural gas and LNG infrastructure projects. Moreover, the Order suggests that there is no other "currently scientifically accepted method that would enable the Commission to determine the significance of reasonably foreseeable GHG emissions."²⁹ In other recent orders, the Commission has explained that it is not determining the significance of GHG emissions because the issue of how to do so is under consideration in the docket for the Commission's draft GHG Policy Statement.³⁰ This Order does not say that. Readers therefore might wonder whether this Order has effectively decided some of the central issues raised in the GHG Policy Statement docket.

15. I do not know whether the Social Cost of GHGs protocol or another tool can or should be used to determine significance. That is because the Commission has not seriously studied the answer to that question. Rather, the majority has simply decided the method does not work, with no explanation of why the Commission departs from the

²⁷ See *id.* at P 15.

²⁸ See *id.* at PP 20-21, 26.

²⁹ *Id.* at P 21.

³⁰ See, e.g., *Transcon. Gas Pipe Line Co.*, 182 FERC ¶ 61,006, at P 73 & n.174 (2023); *Columbia Gas Transmission, LLC*, 182 FERC ¶ 61,171, at P 46 & n.93 (2023).

approach so recently taken in other similar orders.³¹ We have yet to address the voluminous record in the GHG Policy Statement docket, including comments that speak to this question. What I do know is that we should decide the important unresolved issues relating to our assessment of GHG emissions through careful deliberation in a generic proceeding with full transparency.

For the foregoing reasons, I respectfully dissent.

Allison Clements
Commissioner

³¹ To depart from prior precedent without explanation violates the Administrative Procedure Act. *See, e.g., W. Deptford Energy, LLC v. FERC*, 766 F.3d 10, 17 (D.C. Cir. 2014) (“[T]he Commission cannot depart from [prior] rulings without providing a reasoned analysis.”) (citations omitted).

Document Content(s)

CP16 116 002.docx.....1